

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	<b>Karl Kohlrus</b>
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<b>Industry Segment #</b>	<b>5</b>
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- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities





**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes                       No  
 Comments      The minimum voltage of a Bulk Electric System should be 100 KV.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes                       No  
 Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes             No  
 Comments

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes             No  
 Comments    The definition of real-time data needs to make reference to how often it is collected (e.g. every 4 seconds) and how quickly it is reported (e.g. every 2 seconds).

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes             No  
 Comments    In the event that there are different ratings of the same facility, the lower rating should always be used.

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes             No  
 Comments

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8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments              Some of the more serious violations seemed to have the lesser penalties and vice versa.

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                      X  No

X  Comments:

The parenthetical portion of the definition is too inclusive in specifying what makes up the “high voltage transmission system”. It requires all lines “above 35 kV or as approved in a tariff filed with FERC” to be included as part of the Bulk Electric System. Many lines that would fit this specification are indeed “transmission” rather than “distribution”, but they may not be part of the BULK transmission, i.e., the transmission that affects the overall reliability of the interconnected systems. Such “non-bulk” transmission lines could be called “subtransmission” or “underlying transmission” or “local transmission”. Many lines above 35 kV fall into this “non-bulk” category. Also, FERC tariff filings may limit lines to voltage levels above 35 kV, but may still contain many “non-bulk” transmission lines in order that such lines may receive proper regulatory treatment. In those cases, an entity would have no choice but to consider those “non-bulk” lines as part of the Bulk Electric System.

The definition should be corrected by either of the following:

- a. Delete the parenthetical portion, OR,
  - b. Change the parenthetical portion to the following –“(above 35 kV or as defined in a publicly available document)”. This would still allow the FERC filing to be used to limit and define the Bulk Electric System, IF APPROPRIATE. If further limiting is needed, this would allow an entity to produce, and make publicly available, another document to define the Bulk Electric System.
2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                      X  No

X  Comments:

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The definition implies that Cascading Outages ALWAYS result in 300 MW of load loss for a minimum of 15 minutes. This result is likely, but not 100% sure.

The definition should be corrected by either of the following:

- a. End the sentence with “at any location.” and delete the remainder, OR,
  - b. Same as a. above, and add the following sentence – “Cascading Outages will likely have a Wide-Area Impact”. Note that Wide-Area Impact is separately defined to include the 300 MW / 15 minute criteria.
3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes       No  
 Comments



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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments: The definition uses the expression "networked system load", which implies that "single source fed system load" is excluded. Therefore, we would conclude that the loss of 300 MW or more of "single source fed system load" does not have "Wide Area Impact". Is that the intent of the definition?

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes       No

Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes       No

Comments

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8. Do you agree with the compliance monitoring process?

X  Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

X  Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

X  Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                      X  No

X  Comments: Public posting of IROLs is a market issue, which should be considered in any complementary NAESB standard.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

X  Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

X  Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

Keep the minimum of 30 seconds  
X  Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
X  Comments: Changing to 1 minute gives better assurance of good telemetry and allows for the system to settle more.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

Yes                       No

Comments: The table can be simplified by making four columns for the four "event duration exceeds its  $T_v$ " segments, instead of repeating them six times. The table will then form a six by four grid with the multiplication factors filling the grid.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by                      ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

X  Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
X  No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
X  I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- X Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

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Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT. These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then

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the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

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### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.



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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>	
Name	
Organization	
Industry Segment #	
Telephone	
E-mail	

<p><b>Key to Industry Segment #'s:</b></p> <p>1 – Trans. Owners                  2 – RTO's, ISO's, RRC's                  3 – LSE's                  4 – TDU's                  5 - Generators                  6 - Brokers, Aggregators, and Marketers                  7 - Large Electricity End Users                  8 - Small Electricity Users                  9 - Federal, State, and Provincial Regulatory or other Govt. Entities</p>
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<b><i>STD Commenter Information (For Groups Submitting Group Comments)</i></b>		
<b><i>Name of Group: Operating Reliability Working Group</i></b>		<b><i>Group Chair: Scott Moore</i></b>
<b><i>Southwest Power Pool</i></b>		<b><i>Chair Phone: 614-716-6600</i></b>
		<b><i>Chair Email: <a href="mailto:spmoore@aep.com">spmoore@aep.com</a></i></b>
<b><i>List of Group Participants that Support These Comments:</i></b>		
<b><i>Name</i></b>	<b><i>Company</i></b>	<b><i>Industry Segment #</i></b>
Dan Boezio	AEP	1
Ron Ciesiel	SPP	2
Bob Cochran	SPS	1
Mike Gammon	KCP&L	1
Allen Klassen	Westar	1
Peter Kuebeck	OG&E	1
Mike Stafford	GRDA	1
Robert Rhodes	SPP	2

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes

X No

X Comments

Reference to a voltage class is fine, but the correct voltage class should be referenced. In the Introduction Section of the NERC Planning Standards the definition of Bulk Electric System contains 100 kV as the qualifier. Shouldn't this definition be consistent with this long-standing definition?

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes

X No

X Comments

Using loss of load to imply a cascading event is not a logical link. If the point is to develop a limit for a reportable event, then call it a reportable event not a cascading outage. While this definition does set quantitative limits for cascading outages it doesn't really capture the link to cascading events. We would prefer the previous version of the definition, which while it was not as specific, captured the generic idea of cascading outages better. Trying to define cascading outages discretely may not be possible. Perhaps this definition is best left to the Determine Facility Ratings standard.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes

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X No

X Comments

If IROLs are truly significant interconnection events, then 30 minutes for  $T_v$  is probably a good value. However, if the definition of IROL stays with the proposed limits of 300 MW of load, then 30 minutes may be too short.

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes  
 No

X Comments

This term does not appear in the standard, why does it need to be defined here?

If it is felt that the definition must be included, then 300 MW is too small to be considered a wide area when compared to the interconnection.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes                      X No

X Comments

The definition of an IROL Event Duration lists a reset time of 30 seconds. In 204(b)(1)(ii) the reset period is given as one minute. Whichever the case, 30 seconds or 1 minute is too short of a period for the reset. This should be on the order of 5 minutes or so in order to indicate that stable operating conditions have been attained.

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

X Yes                       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a



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'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes             No  
 Comments

8. Do you agree with the compliance monitoring process?

Yes                       No  
 Comments

We would suggest that the phrase in 201(d)(1) referring to on-site reviews every three years be replaced with on-site reviews as needed.

9. Do you agree with the levels of non-compliance?

Yes             No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments

This should be incorporated in the Coordinate Operations standard and doesn't need to be repeated here.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators: (a) The system conditions under which the Interconnection Reliability Operating Limit applies, (b) The contingency that is the basis for the limit, (c) The impact of exceeding the limit	<input checked="" type="checkbox"/> X Yes
	<input type="checkbox"/>

No  Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL	<input checked="" type="checkbox"/> X Yes
<input type="checkbox"/> No <input type="checkbox"/> Comments	

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

Keep the minimum of 30 seconds

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.	<input type="checkbox"/>
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minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

Refer to our comment to Question 5. Something on the order of 5-10 minutes may be a better indicator of true system recovery.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

Yes                      X No  
 Comments

There are no sanctions listed for a Maximum Value over 30%. The last stage should be set at equal to or greater than 25%.

The validity of the table is directly related to the definition of IROL. If an IROL is truly a significant interconnection event, similar in consequences to the August 14 event, then it doesn't matter if the IROL is violated for 5 minutes or 35 minutes, it was violated. If defined properly, a major portion of the interconnection would be jeopardized. If IROL were defined properly, the table would not be needed. Therefore a graduated table may be inappropriate. On the other hand, if IROL is defined as only 300 MW of load loss, then a graduated table may be more fitting.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> <small>Max Value % = (Max Value/ IROL limit -1)*100</small>	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30

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	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45
$25\% < \text{Max Value \%} \leq 30\%$		

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- X Yes       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- X Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
X No, I am not a member of the Ballot Pool for this standard  
X Comments

There were both members and non-members of the balloting pool.

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- X I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
X Comments

Depending upon the response to our comments and what revisions are made, we can agree or disagree with the technical content of this standard.

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- X I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

An IROL of 300 MW of load loss is too small. Don't lose sight of the fact that an IROL is a significant threat to a large portion of the interconnection. By minimizing the defined threshold for an IROL, the number of IROLs will increase drastically and thereby dilute the significance of the event.

Section 203(b)(1)(ii) requires a real-time assessment at least every 30 minutes. This may be too frequent depending upon the complexity of the studies involved.

Consider reversing noncompliance Levels 3 and 4 in section 203(e). Which of the two levels is worse?

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

***SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL***

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

***Levels of Non-compliance***

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.



**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes                       No  
 Comments

While FERC may approve nearly any voltage level as “transmission,” that does not qualify the facility as part of the bulk electric system. Regional practices and expected power flows can be used to distinguish between bulk and local electric facilities. The Regional Reliability Council should have authority to part of the bulk electric system if the facility owner does not voluntarily consider a facility to be such.

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

Add the term “or has a Wide-Area Impact.”

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes                       No  
 Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes                       No  
 Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes                       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

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8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments

12. Other comments about Requirement 201:



**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

One minute is a clearer indication that conditions have settled and that telemetry has kept up with actual conditions.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.



<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	<b>Marv Landauer</b>
<b>Organization</b>	<b>bpa</b>
<b>Industry Segment #</b>	<b>1</b>
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- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments This definition, since it relates to IROLs, should not be tied to voltage, rather it should be based on function. I suggest the following: "An individual electric system facility is considered part of the Bulk Electric System if the availability of that element (whether it is in or out) impacts the capacity of an SOL or IROL."

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments This definition might be appropriate for the definition of an IROL but it does not fit with the other uses for the term (such as in the performance table). I suggest that this definition be removed and the words from this definition moved into the definition of an IROL in place of the words "cascading outages".

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes             No

Comments I do not agree that this is the appropriate definition of wide area impact. However I also do not see that this term is used anywhere in the document, so I suggest that it be removed entirely.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes             No

Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes             No

Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes             No

Comments

8. Do you agree with the compliance monitoring process?

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- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments



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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>



<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments: We feel that this definition could be interpreted as including all facilities at and above 35kV whether they are transmission or not. The Bulk Electric System should be defined as 100kV and above network transmission system or lower voltage facilities that pass the FERC seven factor test.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments: Determining the amount of load loss and restoration time in a pre-contingency study is not possible with the current real-time analysis tools.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments: However, the standard needs to define acceptable risks.

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes             No

Comments: This definition would qualify the loss of a single industrial customer (greater than 300MWs) as a wide area impact. A wide area impact should be defined as the loss of multiple substations or facilities than result in multiple customer outages totaling 300MWs or greater.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes             No

Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes             No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes             No

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Comments: Provided the RA operator can easily determine if the monitored value is within the limit or exceeds the limit and corrective action need to be taken.

8. Do you agree with the compliance monitoring process?

Yes  No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes  No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes  No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes  No  
 Comments

12. Other comments about Requirement 201: To determine every scenario that would lead to an IROL's ahead of time is a problem.

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments: However, under Requirements 203 or 204 would be a better place to include the addition.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments: Remove  $\leq 30\%$  from the last block.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**



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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

***STD Commenter Information (For Individual Commenters)***

**Name**            **Kathy Davis**  
**Organization**    **Tennessee Valley Authority**  
**Industry Segment #**  
**Telephone**        **423-751-6172**  
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**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities



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**STD Commenter Information (For Groups Submitting Group Comments)**

**Name of Group:**

**Group Chair:**

**Chair Phone:**

**Chair Email:**

**List of Group Participants that Support These Comments:**

<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
Mark Creech	Tennessee Valley Authority	
Larry Goins	Tennessee Valley Authority	
Edd Forsythe	Tennessee Valley Authority	
Jennifer Weber	Tennessee Valley Authority	
Jerry landers	Tennessee Valley Authority	
Al Corbet	Tennessee Valley Authority	

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No  
 Comments

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments -**For a large electric system that fluctuates between 15,000 MW to 29,000 MW in any given day, TVA feels that the loss of 300MW would not cause uncontrolled successive loss of system elements. We would prefer a Percentage of System Load rather than a hard number.**

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No  
 Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

**X Comments - See comments to question 2. Also, if "Wide Area " is implied and not used in this document, why have it at all?**

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

**X Comments- Operational Planning Analysis which states "An analysis of the expected system conditions for the next day's operation and up to 12 months ahead."**

**Currently, Reliability Coordinators have responsibility for real-time through next day and Control Areas have Operational Planning responsibilities up to 12 months.**

**Page 6 of the "question and answers" address this definition and it says that the standard requires that an operational planning analysis be conducted at least once each day, looking ahead at the day ahead. But it appears to me that the definition implies more than next day. Maybe this is okay since the measure does limit it to next day.**

**Most of the SERC RCs have responsibility for multiple control areas. TVA for example does operational planning for several months for the TVA control area, but our scope as RC for AECL, BREC, EKPC is real-time through next day.**

**Scope for RC is real-time through next day.**

**There appears to be a shift in responsibility for this operational planning timeframe, if RC = RA.**

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

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Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes       No  
 Comments

8. Do you agree with the compliance monitoring process?

Yes       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes       No  
 Comment

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes       No -  
 Comments - **RAs should coordinate and reach agreements for IROLs on joint Facilities. RAs should communicate IROLs that could impact neighboring RAs.**

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes       No -  
 Comments **We see no value in posting this and it may pose a security risk.**

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

Yes       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

Yes       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments **"Duration" is ok, but magnitude (maximum value ) should be taken out**

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

Yes       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

**TVA would like to reserve the right to forward additional comments at a later date.**



## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	
<b>Organization</b>	
<b>Industry Segment #</b>	
<b>Telephone</b>	
<b>E-mail</b>	

<p><b>Key to Industry Segment #'s:</b></p> <p>1 – Trans. Owners          2 – RTO's, ISO's, RRC's          3 – LSE's          4 – TDU's          5 - Generators          6 - Brokers, Aggregators, and Marketers          7 - Large Electricity End Users          8 - Small Electricity Users          9 - Federal, State, and Provincial Regulatory or other Govt. Entities</p>
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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> Bonneville Power Administration Transmission		<b>Group Chair:</b> James Murphy <b>Chair Phone:</b> 360-418-2413 <b>Chair Email:</b> jpmurphy@bpa.gov
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
James Murphy	BPAT	1
Mike Viles	BPAT	1
Don Gold	BPAT	1
Richard Spence	BPAT	1
Don Watkins	BPAT	1
Marv Landauer	BPAT	1

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments :

The (above 35 kV or as approved in a tariff filed with FERC) should be changed to (200kV and above or as determined by region). This will avoid including many lines that are not part of the Bulk Electric System, but if they are significant the Regions can add them into consideration for IROL's

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments:

There is a concern with some at BPA that the Definition of Cascading Outages will affect other standards. Specifically the use of "300 MW or more of networked system load for a minimum of 15 minutes" will not work with other standards. It has been suggested to use the current definition for Cascading Outages be used in the IROL definition.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$  :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments





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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments:

Remove definition if it is no longer used.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes                       No

Comments

IROL: "system operating limit" should be capitalized.

IROL Event Duration: The time frame should match the standard, definition says 30 seconds, standard says 1 minute (204b1ii). There are two I in (204b1)

Please include the SOL definition.

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes                       No

Comments

This should be covered in the coordinate operations standard (#100).

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of

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requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes  No

Comments

It should be made clearer that the IROL facilities can be dynamic also. Some read this as only dynamic IROL values. Implementation plan will also need to change to reflect this update.

8. Do you agree with the compliance monitoring process?

Yes  No

Comments

9. Do you agree with the levels of non-compliance?

Yes  No

Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs.

Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes  No

Comments

This should be covered in the coordinate operations standard (#100).

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes  No

Comments

BPAT believes there is no reliability-related reason to publicly post IROL's, in fact it may be a security issue.

12. Other comments about Requirement 201:

201 (d) & (e) (3) (ii) need to be changed to correspond more with (b) (1) (i). Which includes adding "to reflect changes in its Reliability Authority Area's system topology.

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

We agree if (c) is omitted. We believe it would be unrealistic to give the system operators the impact of exceeding the limit for every scenario.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

We agree with either 30 seconds or 1 minute, but 10 minutes is to long.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

We would agree with the table if the sanctions were applied to the appropriate entity. It seems unfair if the sanctions are applied to the RA if TOP did not follow the RA directive fast enough or not at all. One suggestion would require the RA to issue directive within 5 minutes. Below are some possible scenarios where IROL has been violated past  $T_v$ . These may be an over simplification, but it may be a good place to start.

Scenario 1: RA issues directive in 5 minutes, the TOP does not follow directive fast enough or not at all, TOP gets sanction.

Scenario 2: RA issues directive in 5 minutes, the TOP does follow directive fast enough, but directive did not solve problem, RA gets sanction.

Scenario 3: RA issues directive past 5 minutes, RA gets sanctions.

It has also been suggested in BPAT's group that a one time and one time only pass on the sanctions for the first ever offense, or some kind of phase in of the sanctions. This would be to recognize that there maybe some growing pains in implementing this standard for the first time

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30

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15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

Question 19 Comments: BPAT may or may not vote against this standard based on changes to the Functional Model and based on the structure of the Financial Sanctions. BPAT has not determined this yet.

BPAT would like the system operator to be identified as RA system operators were applicable. 202(b)(3) & 202 (d)(3)(i)

In section 200 (2) please identify the name of section 604 where used.

Please add the standard number when other standards are mentioned.

Please include in 208 (d) (3)“(4) Time the actions were taken. This may be important to determine if directive were followed in a timely manner.



## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>
<b>Name</b>
<b>Organization</b>
<b>Industry Segment #</b>
<b>Telephone</b>
<b>E-mail</b>

<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> NPCC, CP9-Reliability Standards Working Group	<b>Group Chair:</b> Guy Zito <b>Chair Phone:</b> 212-840-1070 <b>Chair Email:</b> gzito@npcc.org	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
Ralph Rufrano	New York Power Authority (NYPA)	1
David Kiguel	Hydro One Networks Inc.	1
Roger Champagne	Hydro-Quebec TransÉnergie	1
Greg Campoli	New York ISO (NYISO)	2
Peter Lebro	National Grid	1
Kathleen Goodman	ISO New England (ISO-NE)	2
Dan Stosick	ISO New England (ISO-NE)	2
Al Adamson	New York State Reliability Council (NYSRC)	2
Khagan Khan	The Independent Electricity Market Operator (IMO) Ontario	2
Brian Hogue	Northeast Power Coordinating Council	2
Guy Zito	Northeast Power Coordinating Council	2

### Questions about Definitions

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes                       No  
 Comments

This definition should be reliability-“performance based” and references to tariffs should be removed. The existing NPCC Definition for its **Bulk Power System** is;

“The interconnected electrical systems within northeastern North America comprising generation and transmission facilities on which faults or disturbances can have significant adverse impact outside of the local area. Local areas are determined by the Council members.”

Furthermore NPCC CP9 members listed feel that in no instance should a BES criteria encompass facilities at voltage levels less than 115 kV and strongly urges the eventual adoption of a “performance based” definition not a “voltage based” one.

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

An event characterized by one or more of the following phenomena:

- the loss of **power** system **stability**
- cascading outages of circuits
- oscillations; abnormal ranges of frequency or voltage or both.

NPCC participating members of CP9 feel it is not the threshold of 300 MW that qualifies an incident to be classified as a cascading outage. The loss of 300 MW of load may have nothing to do with cascading or uncontrolled successive losses, 300 MW of load may be lost under certain conditions, but it doesn’t necessarily pose a risk to the interconnection. We believe that the standard specify that the cascading outages not propagate beyond the local area (i.e. Control Area).Moreover, the definition of “Cascading Outage” as outlined in Standard 200 is different from



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that defined in Standard 600 (Develop Facility Ratings, ...). It is recommended to follow a common definition as given in Std 600, including a minor modification, as follows. i.e.”

**“The uncontrolled successive loss of Bulk Electric System elements that propagate beyond a defined area (Balancing Area’s) boundaries.”**

In addition, specific examples about how IROLs are calculated, including specific contingency pair examples for things like thermal limits, are needed such that the whole industry can understand what an IROL is.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes                       No  
 Comments

NPCC participating CP9 members participating agree that the  $T_v$  should be limited to 30 mins. However the last sentence should read  $T_v$  shall not be greater than 30 minutes.

Add discussion to Q&A document to give rationale as to why  $T_v$  under 30 minutes is required.

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4. Several ballots indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes             No  
 Comments

It is proposed that the definition of Widespread Area from NERC OLDTF Report (that was validated by RCWG at its December/03 meeting and was accepted by NERC OC at its March 2004 meeting) be used in the Standard 200 as well. It is stated as below:

**Widespread Area** An area that extends beyond any LOCAL AREA.

**Local Area** The portion of a WIDESPREAD AREA, whose boundaries are predetermined by appropriate analyses, where the impact of a CONTINGENCY or other event will not cause instability, uncontrolled separations or cascading outages to propagate beyond those predetermined boundaries (i.e., will not impact the overall reliability of a major portion of the Interconnection.) Impact to a WIDESPREAD AREA indicates significant impact to the INTERCONNECTION.

OR an alternative option/suggestion is also proposed as follows:

“The impact of an incident resulting in uncontrolled successive loss of system elements in networked system and where the consequences of such significant adverse impact cannot be contained within a defined area that can be demonstrated by studies.

Wide area impact may also be defined correlating it to occurrences of event impacting more than one Reliability Authority.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes             No  
 Comments

The terms/definitions in the Standards should be consistent with the terms/definitions outlined in Functional Model (version 2). As an example, there is an inconsistency in definition of Transmission Operator, i.e. Definition of Transmission Operator should be updated to reflect definition stated in version 2 of the Functional Model – i.e. “operates or directs the operation”.

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Definitions should be in one place not in each standard and definitely should not appear if they are in the Functional Model document.

The definition of IROL presently given in the recent modified template P2T1 (System Operating/Interconnected Reliability Operating Limits Violations) may better serve the purpose in Std 200 as well. It is suggested to use the same definition with few modifications, as follows:

**“ A subset of system operating limits, which if exceeded, could expose a Widespread Area of the Bulk Electrical system to instability, uncontrolled separations(s) or cascading outages.”**

### Questions about Requirement 201 — IROL Identification

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of ‘shared’ Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes                       No  
 Comments

Concern exists that the process required may be too formalized and could be a simple email or telephone call that requires affirmation and a formal legal agreement should not be required.

### Questions about Requirement 201 — IROL Identification, continued

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLS can be dynamic. The SDT modified the requirement so that instead of requiring a ‘list’ of IROLS, the RA must be able to identify the ‘current value’ of its IROLS. Do you agree with this change?

- Yes                       No  
 Comments

While the standard considers the requirements that IROLS can be dynamic, it also needs to provide guidance to operators to identify IROLS as they occur. Also refer to comments given in question 13.

In addition, the System Operators must have the tools, training and information to deal with unforeseen circumstances and make the proper decisions to secure the system in an expeditious and orderly manner following a contingency or other event.

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

NPCC participating members of CP9 doesn’t agree with having a list of facilities.

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Also, what constitutes evidence that a list was updated from an auditing perspective? The requirements need to be clear as to what exactly is needed.

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

What constitutes evidence that a list was updated from an auditing perspective?

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

There should be a mutual agreement on the process of coordination among RAs. The process could be that both Areas calculate a separate limit for common facilities based upon the internal transmission configuration. However, the Areas agree that they will operate to the more conservative limit of the different calculation results. Furthermore, it is expected that a need for appropriate analysis/studies shall be outlined that could identify such common impacted facilities. Such requirements can be included in standard 600.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

Although this a desirable addition, it should consistently appear throughout the document.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

All directives should be acted on irrespective if they are IROL or not. Statements such as this perhaps might be better documented in the Coordinate Operation Standards.

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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16. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

Yes

No!

Comments

We support Mr. Gent's comments to the NERC BOT that monetary sanctions are ineffective to ensure compliance and that market mechanisms and letters of increasing severity are more effective.

There is an issue with the concept of a monetary sanction matrix and what its implications are. NPCC, has expressed concern over its inclusion and maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance. Failure of NERC to gain authority through reliability legislation could result in NERC pursuing actions to implement "Plan B," a "voluntary" approach affording NERC the authority to perform these types of monetary sanctions. NPCC has indicated that any posted Standard, with such a matrix, will not be supported by NPCC, or its members. There are, however, proceedings at NERC by the Compliance Certification Committee (CCC) to address alternative sanction proposals and NPCC will continue to work to oppose monetary sanctions.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> <small>Max Value % = (Max Value/ IROL limit -1)*100</small>	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	10
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	15
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	20
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	25

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	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
20% < Max Value % ≤ 25%	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
25% < Max Value % ≤ 30%	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

17. Several balloters asked for more clarification on the term ‘action plan’ that was used in the last version of this standard. Several other drafting teams have used the terms, ‘processes, procedures or plans’ to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, ‘action plan’ to ‘processes, procedures or plans’ throughout this requirement. Do you agree with this change?

- Yes  No  
 Comments

**Other Questions about this Standard(NPCC Members of CP9 expressed concern over these questions 18-19-and 20. The answers to them are more “process” related than standard related and seem inappropriate. Are differing weights assigned to persons, and their answers, who are not voting in the pool? These questions could raise issues about the process being open and inclusive.)**

18. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the ‘technical content’ of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

20. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.



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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**
- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

21. Other Comments about this Standard:

The footnote on Std 201 states that each IROL is developed by following the requirements in “Determine Facility Ratings, SOLs & Transfer Capabilities” i.e. Std 600. Such requirements with respect to IROL are not mentioned in Std 600, and it is expected that upcoming revised standard shall include this requirement otherwise it is recommended to delete the keynote from this standard 200.

Owing to the fact that “ $T_v$ ” value can be smaller than 30 minutes, it is suggested to update the sub-section 203 (b) (ii) as follows: “ The Reliability authority shall conduct a Real-time Assessment periodically, once every 30 minutes or lesser as applicable in order to capture the allowable lesser duration  $T_v$ s.

General comment on the standard is it seems overly burdensome with documentation and less focused on performance.

Examples regarding the individual definitions might be helpful to be added in an accompanying document.

The Standard should address repeated, planned IROL violations that don't exceed or consistently approach  $T_v$  and preventing this/discouraging this mode of operation from reoccurring. **It is not OK to exceed IROLs** and there are entities that frequently exceed them for short periods of time for economic or other reasons, they are not reportable because they do not exceed  $T_v$ . This behavior must be discouraged through measurement of frequency and severity of IROL through the reporting mechanisms outlined in this standard, and as outlined in new template P2 T1 “*System Operating/IROL Violations*”. In addition, there were no IROL  $T_v$  violations reported to NERC as a result of the events occurring on August 14<sup>th</sup> 2003 which implies either more stringent reporting is required or the IROL and  $T_v$  limit needs to be reevaluated.

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Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>
<b>Name</b>
<b>Organization</b>
<b>Industry Segment #</b>
<b>Telephone</b>
<b>E-mail</b>

- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities



**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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**STD Commenter Information (For Groups Submitting Group Comments)**

**Name of Group:** SERC Operations  
Planning Subcommittee

**Group Chair:** Don Reichenbach  
**Chair Phone:** 704-382-3146  
**Chair Email:** dereiche@duke-energy.com

**List of Group Participants that Support These Comments:**

<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
Carter Edge	Southeastern Power Administration	4 & 5
William Gaither	South Carolina Public Service Authority	1
Ken Skroback	Alabama Electric Cooperative	1
Roger Brand	Municipal Electric Authority of Georgia	1
Phil Creech	Progress Energy - Carolinas	1
Gene Delk	South Carolina Electric and Gas	1
Al McMeekin	South Carolina Electric and Gas	1
Randy Hunt	Dominion-Virginia Power	1
Doug Newbauer	Georgia System Operations	1
Mike Clements	Tennessee Valley Authority	1
Don Reichenbach	Duke Energy	1
Lynna Estep	SERC	2
Dan Kay	South Mississippi Electric Power Association	1
Matt Ansley	Southern Company	1
Uma Gangadharan	Entergy	1

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments We believe that 35 kV is too low for the Bulk Electric System. A more appropriate level would be 100 kV and above.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments The MW amount should not determine whether it is a cascading outage. New definition proposal: The uncontrolled successive loss of networked system elements triggered by an incident at any location.

In response to the second paragraph above for question 2, we do not believe that the 300 MW/15 minute criteria should be used to automatically determine IROL Violations. However, reporting requirements could be based on this criteria with after the fact analyses to determine if an actual IROL violation occurred.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments See comments above

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes       No  
 Comments Uncontrolled separation – Cascading outages (new proposed definition above) that lead to the unplanned break-up of an interconnection.

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes       No  
 Comments It would be beneficial to stress that updating the list of facilities should be done continuously to reflect real-time conditions.

8. Do you agree with the compliance monitoring process?

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Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments We are a group and some members represent members of the Ballot Pool.

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:



## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>
<b>Name</b>
<b>Organization</b>
<b>Industry Segment #</b>
<b>Telephone</b>
<b>E-mail</b>

<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b><i>STD Commenter Information (For Groups Submitting Group Comments)</i></b>	
<b><i>Name of Group:</i></b> MAPP Regional Reliability Council, assisted by its Operating and Planning Subcommittee members listed below.	<b><i>Group Chair:</i></b> Lloyd Linke <b><i>Chair Phone:</i></b> 605-882-7500 <b><i>Chair Email:</i></b> Lloyd@wapa.gov

<b><i>List of Group Participants that Support These Comments:</i></b>		
<b><i>Name</i></b>	<b><i>Company</i></b>	<b><i>Industry Segment #</i></b>
<i>Darrick Moe</i>	<i>WAPA</i>	<i>2</i>
<i>John Swanson</i>	<i>NPPD</i>	<i>2</i>
<i>Paul Koskela</i>	<i>MP</i>	<i>2</i>
<i>Larry Larson</i>	<i>OTP</i>	<i>2</i>
<i>Dick Pursley</i>	<i>GRE</i>	<i>2</i>
<i>Martin Trence</i>	<i>XCEL</i>	<i>2</i>
<i>Todd Gosnell</i>	<i>OPPD</i>	<i>2</i>
<i>Robert Coish</i>	<i>MH</i>	<i>2</i>
<i>Joe Knight</i>	<i>MAPPCOR</i>	<i>2</i>
<i>Tom Mielnik</i>	<i>MEC</i>	<i>2</i>
<i>Dave Jacobson</i>	<i>MH</i>	<i>2</i>
<i>Delyn Helm</i>	<i>GRE</i>	<i>2</i>
<i>Jason Weiers</i>	<i>OTP</i>	<i>2</i>
<i>Dennis Kimm</i>	<i>MEC</i>	<i>2</i>

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes             No  
 Comments

Portions of the transmission system that are operated radially below 100 kV should be excluded to avoid excessive data reporting that may be required for other standards that use this definition.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes             No  
 Comments

The definitions of SOL, IROL, Local Area and Widespread area used in the NERC Operating Limit Definitions and Reporting document approved at the March 23 NERC OC meeting should be used instead of incorporating DOE definitions.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes             No  
 Comments



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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes             No  
 Comments

See comments associated with question 2.

5. The definitions of SOL, IROL, Local Area and Widespread area used in the NERC Operating Limit Definitions and Reporting document approved at the March 23 NERC OC meeting should be used instead of incorporating DOE definitions. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes             No  
 Comments

What is the maximum update interval for Real-time Data?

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes             No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

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Yes                       No  
 Comments

8. Do you agree with the compliance monitoring process?

Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes                       No  
 Comments:

There are inconsistencies, for instance IROL Identification –no list of facilities subject to IROLs is level 4; Monitoring- List of facilities subject to IROLs not available for Real-time use is level 2.

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments:

This would help all entities confirm that the correct value is being used. However, confirm that public posting means posting on the OASIS in an area that registered market participants can access. For national security reasons, these values should not be posted on a web site that any Internet user can access.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

There should be no dollar amounts in the sanctions.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term ‘action plan’ that was used in the last version of this standard. Several other drafting teams have used the terms, ‘processes, procedures or plans’ to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, ‘action plan’ to ‘processes, procedures or plans’ throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments: Some are members of the ballot pool.

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the ‘technical content’ of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments: This is not applicable to a group.

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

The group cannot respond to this for the individuals.

20. Other Comments about this Standard:

We support the prerequisite approval provided on page 2 for the implementation plan of this Standard 200 in which Standard 600 Determine Facility Ratings, System Operating Limits and Transfer Capabilities Standard must be implemented before this standard can be implemented. However, we believe that another prerequisite approval is that the NERC SAC verify that this Standard 200 does not conflict with Standard 600. Otherwise, there will be problems in implementing the two standards. If the SAC determines there is a conflict, then the SAC should send one or both standards back to the drafting teams to be resolved.

The dollar sanctions should be removed from all sections of this standard. The sanctions sections should be replaced with:

- (1) Sanctions for noncompliance shall be applied consistent with the NERC compliance and enforcement matrix, but no financial penalties shall be enforced. Noncompliance sanctions shall consist of letters, issued in accordance with the matrix.



## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of



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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



### Questions about Definitions

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes                       No  
 Comments

This definition should be reliability “performance based” and references to tariffs should be removed. The existing NPCC definition for its **Bulk Power System** is:

“The interconnected electrical systems within northeastern North America comprising generation and transmission facilities on which faults or disturbances can have significant adverse impact outside of the local area. Local areas are determined by the Council members.”

Furthermore, the New York State Reliability Council (NYSRC) feels that in no instance should a BES criterion encompass facilities at voltage levels less than 115 kV and strongly urges the eventual adoption of a “performance based” definition.

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

An event characterized by one or more of the following phenomena:

- the loss of **power** system **stability**
- cascading outages of circuits
- oscillations; abnormal ranges of frequency or voltage, or both.

The NYSRC feels it is not the threshold of 300 MW that qualifies an incident to be classified as a cascading outage. The loss of 300 MW of load may have nothing to do with cascading or uncontrolled successive losses, 300 MW of load may be lost under certain conditions, but it doesn’t necessarily pose a risk to the interconnection. We believe that the standard specify that the cascading outages not propagate beyond the local area (i.e. Control Area). Moreover, the definition of “Cascading Outage” as outlined in Standard 200 is different from that defined in draft Standard

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600 (Develop Facility Ratings, ...). It is recommended to follow a common definition as given in Standard 600, including a minor modification, as follows:

**“The uncontrolled successive loss of Bulk Electric System elements that propagate beyond a defined area (Balancing Area’s) boundaries.”**

In addition, specific examples about how IROLs are calculated, including specific contingency pair examples for things like thermal limits, are needed such that the whole industry can understand what an IROL is.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes             No  
 Comments

The NYSRC agrees that the  $T_v$  should be limited to 30 minutes. However, the last sentence should read “ $T_v$  shall not be greater than 30 minutes”.

We suggest that discussion in the Q&A document be added to include the rationale as to why  $T_v$  under 30 minutes is required.



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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes             No  
 Comments

It is proposed that the definition of "Widespread Area" from the NERC OLDTF Report (that was validated by RCWG at its December 2003 meeting and was accepted by NERC OC at its March 2004 meeting) be used in Standard 200 as well. It is stated as below:

**Widespread Area** An area that extends beyond any LOCAL AREA.

**Local Area** The portion of a WIDESPREAD AREA, whose boundaries are predetermined by appropriate analyses, where the impact of a CONTINGENCY or other event will not cause instability, uncontrolled separations or cascading outages to propagate beyond those predetermined boundaries (i.e., will not impact the overall reliability of a major portion of the Interconnection.) Impact to a WIDESPREAD AREA indicates significant impact to the INTERCONNECTION.

OR an alternative option/suggestion is also proposed as follows:

"The impact of an incident resulting in uncontrolled successive loss of system elements in networked system and where the consequences of such significant adverse impact cannot be contained within a defined area that can be demonstrated by studies."

Wide Area Impact may also be defined correlating it to occurrences of an event impacting more than one Reliability Authority.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes             No  
 Comments

The terms/definitions in the Standards should be consistent with the terms/definitions outlined in Functional Model (version 2). As an example, there is an inconsistency in the definition of Transmission Operator, i.e., the definition of Transmission Operator should be updated to reflect the definition stated in version 2 of the Functional Model, i.e., "operates or directs the operation".

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Definitions should be in one place, not in each standard, and definitely should not appear if they are in the Functional Model document.

The definition of IROL presently given in the recent modified template P2T1 (System Operating/Interconnected Reliability Operating Limits Violations) may better serve the purpose in Standard 200 as well. It is suggested to use the same definition with few modifications, as follows:

**“A subset of system operating limits, which if exceeded, could expose a Widespread Area of the Bulk Electrical system to instability, uncontrolled separations(s) or cascading outages.”**

### Questions about Requirement 201 — IROL Identification

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of ‘shared’ Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes                       No  
 Comments

Concern exists that the process required may be too formalized and could be a simple e-mail or telephone call that requires affirmation, and a formal legal agreement should not be required.

### Questions about Requirement 201 — IROL Identification, continued

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a ‘list’ of IROLs, the RA must be able to identify the ‘current value’ of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

While the standard considers the requirements that IROLs can be dynamic, it also needs to provide guidance to operators to identify IROLs as they occur. Also, refer to comments given in question 13.

In addition, the System Operators must have the tools, training and information to deal with unforeseen circumstances and make the proper decisions to secure the system in an expeditious and orderly manner following a contingency or other event.

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

The NYSRC doesn’t agree with having a list of facilities.

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Also, what constitutes evidence that a list was updated from an auditing perspective? The requirements need to be clear as to what exactly is needed.

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

What constitutes evidence that a list was updated from an auditing perspective?

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

There should be a mutual agreement on the process of coordination among RAs. The process could be that both Areas calculate a separate limit for common facilities based upon the internal transmission configuration. However, the Areas agree that they will operate to the more conservative limit of the different calculation results. Furthermore, it is expected that a need for appropriate analysis/studies shall be outlined that could identify such common impacted facilities. Such requirements can be included in Standard 600.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

Although this is a desirable addition, it should consistently appear throughout the document.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

All directives should be acted on irrespective if they are IROL or not. Statements such as this perhaps might be better documented in the Coordinate Operation Standard.

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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16. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

Yes

No!

Comments

The NYSRC is opposed to monetary sanctions as the only option for dealing with noncompliance as applied in this and other proposed NERC Standards. Unfortunately, direct monetary sanctions invite “gaming the system”, and encourage “business” decisions based on potential profits or savings versus potential penalties. Instead of monetary sanctions, the NYSRC prefers that NERC have the authority to issue letters of increasing degrees of severity to communicate noncompliance of mandatory standards. The NYSRC and NPCC now rely on a more stringent and mandatory process than monetary sanctions to assure compliance with reliability standards. Compliance is now mandatory through the contractual agreements and tariffs that all participants need in order to conduct business. The use by the NYSRC and NPCC of letters to regulatory agencies and other oversight bodies for reporting noncompliance has demonstrated that letter sanctions are a more effective tool for ensuring adherence to standards. Such letters establish the basis for liability in the event of a subsequent criterion violation, and in the case of market participant noncompliance, threaten the violator’s ability to do business with or through an ISO or RTO. Moreover, letters that communicate noncompliance best allow focus on the “root cause” of a violation, as well as its reliability impact.

Therefore, the NYSRC recommends that this and other NERC Standards expressly provide that letter sanctions be used in addition to or instead of monetary sanctions under circumstances in which they would be an equally or more effective enforcement mechanism.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> <small>Max Value % = (Max Value/ IROL limit -1)*100</small>	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	10
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	15
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	20
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	25

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	Duration > T <sub>v</sub> + 15 minutes	30
15% < Max Value % ≤ 20%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	20
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	25
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	30
	Duration > T <sub>v</sub> + 15 minutes	35
20% < Max Value % ≤ 25%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	25
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	30
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	35
	Duration > T <sub>v</sub> + 15 minutes	40
25% < Max Value % ≤ 30%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	30
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	35
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	40
	Duration > T <sub>v</sub> + 15 minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

17. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

18. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

20. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

21. Other Comments about this Standard:

The footnote on Standard 201 states that each IROL is developed by following the requirements in “Determine Facility Ratings, SOLs & Transfer Capabilities”, i.e., Standard 600. Such requirements with respect to IROL are not mentioned in Standard 600, and it is expected that the upcoming revised standard will include this requirement; otherwise, it is recommended to delete the keynote from Standard 200.

Owing to the fact that the “T<sub>v</sub>” value can be smaller than 30 minutes, it is suggested to update the sub-section 203 (b) (ii) as follows: “The Reliability authority shall conduct a Real-Time Assessment periodically, once every 30 minutes or lesser, as applicable, in order to capture the allowable lesser duration T<sub>v</sub>s.

A general comment on the standard: It seems overly burdensome with documentation and less focused on performance.

Examples regarding the individual definitions might be helpful if added in an accompanying document.

The Standard should address repeated, planned IROL violations that don’t exceed or consistently approach T<sub>v</sub> and preventing this/discouraging this mode of operation from reoccurring. **It is not OK to exceed IROLs.** There are entities that frequently exceed them for short periods of time for economic or other reasons which are not reportable because they do not exceed T<sub>v</sub>. This behavior must be discouraged through measurement of frequency and severity of IROL through the reporting mechanisms outlined in this standard, and as outlined in new template P2 T1 “*System Operating/IROL Violations*”. In addition, there were no IROL T<sub>v</sub> violations reported to NERC as a result of the events occurring on August 14, 2003, which implies either more stringent reporting is required or the IROL and T<sub>v</sub> limit need to be reevaluated.



## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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<b>Requirements</b>	<b>First Offense</b>	<b>Second Offense</b>	<b>Reasoning</b>
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes                       No  
 Comments

The definition of Bulk Electric System seems to be hard to pin down. We suggest:

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical ~~generation resources and~~ high voltage transmission ~~system facilities above 100 kV and associated equipment, (above 35 kV or as approved in a tariff filed with FERC), and generation resources connected to that transmission system.~~

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

Cascading Outages is another term that is hard to define. Cascading Outage should be define in terms of the successive loss of system elements for which we suggest the definition be changed to:

**Cascading Outages:** The uncontrolled successive loss of networked system elements triggered by an incident at any location that results in the operation of more than 4 relays and the loss ~~of 300 MW or more~~ of networked system load for a minimum of 15 minutes.



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3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes                       No  
 Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes             No  
 Comments

We suggest the definition of Wide Area Impact should include a number of transmission providers, rather than MWs of load, and propose the following:

**Wide Area Impact:** The impact of a single incident resulting from the uncontrolled loss of networked system elements involving two or more transmission providers triggered by an incident at any location that results in the uncontrolled loss ~~of 300 MW or more~~ of networked system load for a minimum of 15 minutes.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes             No  
 Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes             No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

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7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes                       No  
 Comments

There have been several changes to the Requirements and Measures of 201 and we are unsure to which change this question refers. Therefore, we can not agree with the change at this time.

8. Do you agree with the compliance monitoring process?

Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

Entergy agrees with multipliers, but they should only be applied to repeat offenders. NERC should use multipliers if the same event occurs without remediation, or if different events pop up with the same systemic cause.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40

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25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:



## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	<b>Bill Thompson</b>
<b>Organization</b>	<b>Dominion</b>
<b>Industry Segment #</b>	
<b>Telephone</b>	
<b>E-mail</b>	

<p><b>Key to Industry Segment #'s:</b></p> <p>1 – Trans. Owners                  2 – RTO's, ISO's, RRC's                  3 – LSE's                  4 – TDU's                  5 - Generators                  6 - Brokers, Aggregators, and Marketers                  7 - Large Electricity End Users                  8 - Small Electricity Users                  9 - Federal, State, and Provincial Regulatory or other Govt. Entities</p>
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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b> Chair Phone: 804 273 3300 Chair Email:	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
Jalal Babik	Dominion VA Power	1
Craig Crider	Dominion VA Power	1
Jack Kerr	Dominion VA Power	1
Bill Thompson	Dominion VA Power	1

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes  No

**Comments:** By this definition, a Bulk Electric System could be as small as the transmission system covered by the OATT of the smallest "electric utility". This interpretation is not consistent with the usage of the term in the definition of IROL that appears in the revised Policy 9 currently being balloted by the Standing Committees.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes  No

**Comments:** The narrow definition may cause some issues for the operators, depending on how this standard is applied, and whether planned maintenance and a contingency becomes an issue under transfer conditions. The key will be if you can get out of the condition quickly-i.e. 30 minutes.

If the cascading outages definition trickles over to the Planning side or to other Operations Standards, it could mean extra expenditures for the company. There are a number of places where double contingencies can cause large loss of load, but not cascading as defined as follows:

**Cascading (planning definition/old ops definition):** The uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread service interruption, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies

This definition gives much leeway. As long as you studied it, and you can tell how far the interruption spreads, it is not cascading. We could lose Northern Virginia or South Hampton Roads and still be in compliance. The loss of both 500 kV feeds to Yadkin and Fentress would drop over 300 MW.



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3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes                       No  
 Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

- Comment: **See item 2 comments. Also, a dynamic instability can cause power system oscillations and equipment "swinging" over a large part of an interconnection and yet result in no loss of load. This situation could be caused by a single incident such as loss of a long line or a malfunction of a power system stabilizer and would definitely be considered to have a wide area impact on the reliability of the interconnection and the safety of interconnected equipment. The proposed definition is not applicable. The definition of Wide Area Impact is not consistent with the definition of Wide Area that appears in the revised Policy 9 currently being balloted by the Standing Committees.**

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

- Comments: **The definition of IROL in this standard, "A system operating limit which, if exceeded, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the bulk electric system.", is not consistent with the definition in the revised Policy 9 currently being balloted by the Standing Committees, "The value (such as MW, MVar, Amperes, Frequency or Volts) derived from, or a subset of the SYSTEM OPERATING LIMITS, which if exceeded, could expose a widespread area of the BULK ELECTRIC SYSTEM to instability, uncontrolled separation(s) or cascading outages". The definition in this standard loses the concept of wide area.**

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

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- Yes                       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

**I agree with the levels for actual operating events, but don't agree with the concept that a newfound definition of an IROL would result in a level 4 under "IROL Identification." In fact, for first time offenses under the heading of "IROL Identification," there should be no monetary fines. My concern is based on disagreement with the definition proposed here.**

**I also disagree with the levels and associated fines under "Analyses and Assessments" since it implies that for one miss of a successful state estimator/contingency analysis run there could be a fine. I want NERC to issue minimum standards for the real-time analysis function that should specify a mean time between failures or to define a maximum allowable downtime for the operation. This is discussed in the US/Canada Task Force Recommendations under number 22. Requiring a maximum 30-minute failure, as this standard appears to do, is getting ahead of ourselves in establishing requirements.**

10. Several balloters indicated a concern over coordination of IROLs between RAs.

Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments: **The Transmission Owner is responsible for establishing facility ratings for its equipment. The RA function is to monitor the**

**system according to the TO's System Operating Limits. There is no need to publicly post the IROLs.**

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes  No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

**See comments under items 1, 2, 4, 5, 9, and 11.**

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

**The Board approved a new compliance template that applies to the issues covered by this proposed standard on April 2, 2004. The compliance template that is now approved conflicts with the compliance presented here. I want to know where this is heading. Also see comments under item 9.**



## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments: Please drop the parenthetical expression as it is not applicable in Canada – we would ask NERC and the industry to develop “standard” definitions of the common terms to be used by the all standard-drafting teams. Could we use the definition of transmission out of FERC Order 888?

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments: The definition should read as follows: The uncontrolled successive loss of Bulk Power Transmission elements that propagate beyond a balancing area’s boundaries and have adverse impacts of system frequency, load served, or voltage.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments



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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments: **Wide Area Impact should be defined in relation to a BA footprint. The measure should be that a wide area event occurs when an event has an impact in two or more BA areas.**

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

Comments: **A definition of "shared facilities" is requested.**

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes       No

Comments:

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes       No

Comments

8. Do you agree with the compliance monitoring process?

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Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes                       No  
 Comments: **The CAISO supports financial penalties for non-compliance and recognizes that these penalties should be greater than any potential economic advantage to violating a standard.**

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments: **We feel that using a common number for a limit at a boundary or "joint facility" is basic to the reliability of the system. Having a path operated to two different numbers leads to one side potentially scheduling more than the other side can accommodate and can result in "real-time" disagreements and curtailments that should have been handled in the day-ahead scheduling process.**

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments: **What does "made public" mean? All RAs should be aware of all IROLs but this information may not be appropriate for the "general public". There is a concern over infrastructure security and some concern voiced by a CIPC member.**

12. Other comments about Requirement 201: **None**

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments: **All directives issued by an RA must be followed without question, no matter what the circumstances. The explanations can be provided after actions have been taken and the problem solved. While we agree that if time permits a reason should be provided, the directive must be followed whether or not a reason is provided.**

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments: **The CAISO would like to see a value remain below its limit for two minutes with the understanding that if the value remains below the limit for two**

minutes, the reported end of the event or violation occurs at the time the value actually dropped below the limit.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments:

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard:** Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

17. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

19. Other Comments about this Standard:

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	Alan Gale
<b>Organization</b>	City of Tallahassee
<b>Industry Segment #</b>	5
<b>Telephone</b>	(850) 891-3025
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<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b>	<b>Group Chair:</b>	
	Chair Phone:	
	Chair Email:	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
Rusty Foster	City of Tallahassee	3



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes             No

Comments

Suggested Definition:

**Bulk Electric System:** A term commonly applied to the portion of the electric system used in the transport of power in inter-utility transactions.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes             No

Comments

Suggested Definition:

**Cascading Outages:** The uncontrolled successive loss of additional elements outside of normal relaying schemes triggered by an incident at any location that results in the loss of 300MW or more of FIRM customer load.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes             No

Comments

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When would the clock start? When the SOL is reported, after the RA determination that it is an IROL, or after the RA tells the reporting entity that it is an IROL? I recommend not starting the 30 minute clock until after the RA determines it is an IROL.

4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes             No  
 Comments

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes             No  
 Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes             No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes             No

Comments: There is no verbiage in the Requirements section to indicate this change, similar to the changes made in Measure (2) and Non-Compliance level 4(i).

8. Do you agree with the compliance monitoring process?

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Yes       No

Comments:

There should be some consistency across all the standards for time frames of “requested data”. Without it, the Compliance Monitor can not receive the necessary data for a month and the reporting entity can still be compliant.

9. Do you agree with the levels of non-compliance?

Yes       No

Comments:

There should be some consistency across all the standards for time frames of “reviewing or updating”. Without it, an entity can only review its documents and programs “at will” and still be compliant.

10. Several balloters indicated a concern over coordination of IROLs between RAs.

Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes       No

Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes       No

Comments:

This information can be considered secure Critical Infrastructure Information, as well as Market Sensitive, and should not be publicly posted.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

- (i) The RA shall provide the following information to its system operators:
- (a) The system conditions under which the Interconnection Reliability Operating Limit applies,
  - (b) The contingency that is the basis for the limit,
  - (c) The impact of exceeding the limit

Yes       No

Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes

Comments:

Changes here may require looking at the sanctions table and the definition of  $T_v$ . **Two minutes** will ensure the IROL is truly mitigated and not the result of telemetry or integration errors. 5 or 10 minutes may result in exceeding  $T_v$  time limits when the IROL has been mitigated.

16. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be **the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.**

Do you agree with this table?

- Yes       No  
 Comments

Although I agree with the need to increase the penalty to coincide with the magnitude of the violation, these proposed quantities could result in fines that would significantly impact utility operating budgets, customer rates, and even solvency. The starting point is not defined, but a \$1,000 fine that could go to a \$40,000 fine or a \$4,000 fine going to a \$160,000 is a big jump. The reason the IROL was exceeded needs to be addressed. Was it exceeded due to an "Act of

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God”, an N-2 event, a willful violation of procedures, or the refusal to invest in necessary system repairs and upgrades? The difference should be addressed, possibly with a maximum fine.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds T<sub>v</sub>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its T<sub>v</sub> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	5
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	10
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	15
	Duration > T <sub>v</sub> + 15 minutes	20
5% < Max Value % ≤ 10%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	10
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	15
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	20
	Duration > T <sub>v</sub> + 15 minutes	25
10% < Max Value % ≤ 15%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	15
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	20
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	25
	Duration > T <sub>v</sub> + 15 minutes	30
15% < Max Value % ≤ 20%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	20
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	25
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	30
	Duration > T <sub>v</sub> + 15 minutes	35
20% < Max Value % ≤ 25%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	25
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	30
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	35
	Duration > T <sub>v</sub> + 15 minutes	40
25% < Max Value % ≤ 30%	T <sub>v</sub> < Duration ≤ T <sub>v</sub> + 5 minutes	30
	T <sub>v</sub> + 5 minutes < Duration ≤ T <sub>v</sub> + 10 minutes	35
	T <sub>v</sub> + 10 minutes < Duration ≤ T <sub>v</sub> + 15 minutes	40
	Duration > T <sub>v</sub> + 15 minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

17. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

Yes       No  
 Comments

**Other Questions about this Standard**

18. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments: I agree with the technical content as amended by my comments. I will reserve judgment until I see how they are incorporated.

20. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

21. Other Comments about this Standard:

- The Compliance Monitoring Process for 202-208 requires that certain information be provided to the Compliance Monitor “upon request”. There should be some consistency across all the standards for time frames of “requested data”. Without it, the Compliance Monitor can get the run around for a month and the reporting entity can still be compliant.
- 203
  - Requirements and Measures - Although not specified in the Requirements, the Measures requires an Operational Planning Analysis at least once each day for the “projected system operating conditions”. This would preclude a “day ahead” analysis of the weekend (or holiday) from being performed on Friday. A provision should be made that would allow this. Trigger a required analysis if system conditions differed from the analyzed conditions. (i.e. a line was planned to be out Saturday only, but remains out on Sunday would trigger a new analysis. If the line was back in, it would not require an analysis be done on Saturday for Sunday, the analysis on Friday would remain valid.)
- 204
  - Requirements
    1. Who is responsible for implementing an IROL mitigation plan? Transmission Owner? RA? Does the RA develop the plan or the Transmission Owner?
    2. Footnote 2 indicates the no action “may be acceptable as long as it is documented”, what type of documentation is required?
    3. If “no overt action” is acceptable, is it an IROL?
- 205
  - Measure (3)(i) should be revised to indicate that the Compliance Monitor should be notified within five business days of determining the data issue could not be resolved.
  - Non-compliance levels – Why is there a Level 1 and Level 2, rather than Level 3 and Level 4. It appears that this information is very important to maintain a reliable system. In addition, if there is a measure for notifying the Compliance Monitor when data issues cannot be resolved, a level of non-compliance should be included when this notification is not provided.
- 206
  - Non-Compliance Level 4 - Should be revised to separate “not providing the data” from the “inability to resolve the issue”. The inability to send the data due to a technical problem that is being upgraded should be differentiated from the refusal to

provide the data (“inability to resolve”). This will allow a lower level of non-compliance while pursuing any necessary equipment or technology upgrades.

- 207
  - Requirements and Levels of Non-Compliance – from this it appears that the Reliability Authority will work with other entities to develop processes, procedures, and plans, but the levels of non-compliance indicated that these activities could be developed with no input. What good is this if an Reliability Authority can’t perform the mitigation? Seems very broad and burdensome to the Reliability Authority.
  - There should be some consistency across all the standards for time frames of “reviewing or updating”. Without it, an entity can only review its documents and programs “at will” and still be compliant
- 208
  - Requirements - The standard does not address seams issues. Although 201 requires Reliability Authorities that share facilities to develop IROL procedures and lists, there needs to be a requirement included that would allow one Reliability Authority to give directives to another Reliability Authority.
  - Levels of Non-Compliance – If an entity does not follow the Reliability Authority directive, and the Reliability Authority does not have the ability to take action, other than the financial penalty there is no way to make entities comply with directives and reliability will be jeopardized.



## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

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<b>Requirements</b>	<b>First Offense</b>	<b>Second Offense</b>	<b>Reasoning</b>
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>	
<b>Name</b>	
<b>Organization</b>	
<b>Industry Segment #</b>	
<b>Telephone</b>	
<b>E-mail</b>	

<p><b>Key to Industry Segment #'s:</b></p> <p>1 – Trans. Owners                  2 – RTO's, ISO's, RRC's                  3 – LSE's                  4 – TDU's                  5 - Generators                  6 - Brokers, Aggregators, and Marketers                  7 - Large Electricity End Users                  8 - Small Electricity Users                  9 - Federal, State, and Provincial Regulatory or other Govt. Entities</p>
--

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> Southern Generation and Energy Marketing, SCGEM		<b>Group Chair:</b> Roman Carter <b>Chair Phone:</b> 205-257-6027 <b>Chair Email:</b> jrcarter@southernco.com
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
Roman Carter	SCGEM	5,6
Joel Dison	SCGEM	5,6
Tony Reed	SCGEM	5,6
Lloyd Barnes	SCGEM	5,6
Clifford Shepard	SCGEM	5,6
Lucius Burris	SCGEM	5,6
Roger Green	SCGEM	5

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes       No

Comments:

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes       No

Comments



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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments:

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

Comments: ***all are improved and acceptable***

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes       No

Comments : **This requirement seems to overlap the requirements in the Coordinate Operations standard. The two standards should be coordinated to avoid unnecessary repetition.**

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes       No

Comments

8. Do you agree with the compliance monitoring process?

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Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments : **The Standard already states that RAs that share a facility, having an IROL, will agree to a 'process' for determining if it qualifies and what the value should be. Being more prescriptive doesn't add anything here.**

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
× Comments: Certain limit information can be beneficial to the Wholesale Market. By including appropriate levels of viewing restrictions, passwords, and security screens, etc., it could be posted without harm to physical security.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments: **This helps to identify the message as to relate to an IROL.**

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
Comments;

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments:

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard: **We would like to express our appreciation to the SDT for taking the time and trouble to revisit the comments on this standard. We realize the time it takes to participate on these teams and the dedication to it. While the last version of this standard was voted down this version is greatly improved and should pass the test. Thank you all for your efforts to listen to the industry and the people who operate the power systems on a daily basis and making this a workable product. We applaud you.**

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

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### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.



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<b>Requirements</b>	<b>First Offense</b>	<b>Second Offense</b>	<b>Reasoning</b>
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



### Questions about Definitions

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

**Comments**      The BES should be defined based on performance (impact) on the power system, not a pre-defined voltage level. Suggest using a definition similar to NPCC “BULK POWER SYSTEM – The interconnected electrical systems within northeastern North America comprising generation and transmission facilities on which faults or disturbances have a significant adverse impact outside of the local area” (i.e. Control Area). If a pre-defined voltage level is necessary, at a minimum, it should not be less than a 115 kV threshold.

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

**Comments**      This does not appropriately indicate that the losses are “cascading,” not localized, not BES, etc. Agreed with the concept of “uncontrolled successive loss,” but do not agree that the 300 MW is an appropriate measure. The loss of 300 MW of load has nothing to do with cascading or uncontrolled successive losses. You may lose over 300 MW of load, but it poses no risk to the interconnection. We believe that the standard should be that the cascading outages propagate beyond the local area (i.e. Control Area). Specific, hard, concrete examples about how IROLs are calculated, including specific contingency pair examples for things like thermal limits, are needed such that the whole industry can understand what an IROL is.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

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- Yes       No  
 Comments

4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No

Comments

The definition should capture the concept of Interconnection impact. Agreed with the concept of "uncontrolled successive loss," but do not agree that the 300 MW is an appropriate measure. The loss of 300 MW of load has nothing to do with cascading or uncontrolled successive losses. You may lose over 300 MW of load, but it poses no risk to the interconnection. We believe that the standard should be that the cascading outages propagate beyond the local area (i.e. Control Area). Specific, hard, concrete examples about how IROLs are calculated, including specific contingency pair examples for things like thermal limits, are needed such that the whole industry can understand what an IROL is.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes       No

Comments

Generator Owner definition is not needed in this standard.

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes       No

Comments

We do have a concern about having a formal process. The process could be that both Areas calculate a separate limit for common facilities based upon the internal

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transmission configuration. However, the Areas agree that they will operate to the more conservative limit.

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes  No

Comments There is reference in this section indicating "which facilities are subject to," "shall have a list," "evidence that the list was updated," etc.

It is ISO-NE's position that Standard 200 should clearly reflect the fact that IROL's can be dynamic in nature. While it may be possible that every possible configuration can be identified in advance to deal with this dynamic, the reality is that this list would be extremely large and difficult to maintain. To improve on the situation, this section should require that the RA operators have a base set of limits that include N-1 configurations, along with identifying the following:

- The boundary conditions for which the published limits are applicable;
- The critical contingency that drive the applicable limit; and
- An understanding of what the associated limit is designed to protect the system against (i.e. transient stability, voltage decline, etc.)

The System Operators must have the tools, training and information to deal with unforeseen circumstances and make the proper decisions to secure the system in an expeditious and orderly manner following a contingency or other event.

8. Do you agree with the compliance monitoring process?

Yes  No

Comments

What constitutes "evidence that the list was updated"? For compliance monitoring, all requirements need to be clear as to what exactly is needed.

9. Do you agree with the levels of non-compliance?

Yes  No

Comments

What constitutes "evidence that the list was updated"? For compliance monitoring, all requirements need to be clear as to what exactly is needed.

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes  No



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**Comments**      We do have a concern about having a formal process. The process could be that both Areas calculate a separate limit for common facilities based upon the internal transmission configuration. However, the Areas agree that they will operate to the more conservative limit.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

Yes                       No  
 **Comments**      We agree that the directive should include notice that a potential or actual contingency requires actions to correct the problem. We do not think that the use of the specific term is required.

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

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suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

- Keep the minimum of 30 seconds
- Change the minimum to 1 minute
- Change the minimum to 10 minutes

**Comments** Should be reset immediately when the Limit is cleared and sustained. Should be cleared based on last good telemetry value.

12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
- No

**Comments** There is an issue with the concept of a monetary sanction matrix and what its implications are. ISO-NE, as well as NPCC, has expressed concern over its inclusion and maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance. Failure of NERC to gain authority through reliability legislation could result in NERC pursuing actions to implement "Plan B," a "voluntary" approach affording NERC the authority to perform these types of monetary sanctions. ISO-NE has indicated that any posted Standard, with such a matrix, will not be supported by ISO-NE. There are, however, proceedings at NERC by the Compliance Certification Committee (CCC) to address alternative sanction proposals and ISO-NE will continue to work to oppose monetary sanctions.

If the Maximum Value % over the Limit (measured after the event duration exceeds $T_v$ ) is: <small>Max Value % = (Max Value/ IROL limit -1)*100</small>	And the event duration exceeds its $T_v$ by ___ minutes:	Then Multiply the Level 4 \$ sanction by:
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	10
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	15
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	20
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	25

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	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term ‘action plan’ that was used in the last version of this standard. Several other drafting teams have used the terms, ‘processes, procedures or plans’ to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, ‘action plan’ to ‘processes, procedures or plans’ throughout this requirement. Do you agree with this change?

Yes

No

Comments

Do not believe there should be a requirement for either. Operators should be appropriately trained and provided with strategies to take the correct actions necessary to operate a system reliably.

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard

No, I am not a member of the Ballot Pool for this standard

Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the ‘technical content’ of the standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.

I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.

I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.

Comments      Example: 208 requires documentation of the RA’s directives and the actions taken. Also, although the levels of non-compliance are not considered as “technical content,” for the purpose of explaining the disagreement, we need to reference Level 1 non-compliance, which is directly related to the requirement. If the actions were taken and the directives were followed, why would an operator be found non-compliant for not documenting such actions and directives?

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would

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include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**
- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

### 20. Other Comments about this Standard:

The standard seems to be measured more on documentation than performance. Our concern is that the requirements to document may delay action and response time, therefore adversely impacting reliability. The standard should focus on performance and not whether every log entry was made in the correct format.

The standard should be reviewed to ensure that all references to IROLs include the word “operating” if the definition will move forward as IROL vs. IRL (note that Attachment A to NERC’s recommendation 1 from August 14<sup>th</sup> uses IRL, not IROL). Consistency needs to be applied.

The Phased-in implementation in 200 does not make sense: if the data is not obtained for 12 months, how can the monitoring, actions, etc. begin in six months?

While ISO New England generally agrees with a quick implementation of the final approved Standard, there is a large amount of specific data that must be collected and stored to meet the full intent of the Standard. Depending upon what the final approved Standard is, this may require additional software and business processes to fully implement. For this reason we believe that an implementation plan must provide a development period for the responsible entities to fully implement the standard.

There is an issue with the concept of a monetary sanction matrix and what its implications are. ISO-NE, as well as NPCC, has expressed concern over its inclusion and maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance. Failure of NERC to gain authority through reliability legislation could result in NERC pursuing actions to implement “Plan B,” a “voluntary” approach affording NERC the authority to perform these types of monetary sanctions. ISO-NE has indicated that any posted Standard, with such a matrix, will not be supported by ISO-NE. There are, however, proceedings at NERC by the Compliance Certification Committee (CCC) to address alternative sanction proposals and ISO-NE will continue to work to oppose monetary sanctions.

ISO New England believes that this standard should provide clear examples within this standard, describing in detail what constitutes a violation that must be reported along with clear examples of what constitutes and SOL and IROL. Examples should include contingency pair examples for both IROL and SOL thermal limits as well as examples concerning stability and voltage limits.

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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<b>Requirements</b>	<b>First Offense</b>	<b>Second Offense</b>	<b>Reasoning</b>
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	



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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



### Questions about Definitions

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments:

We feel that the definition of BES should not be tied up with FERC tariff. It should be upto the Reliability Authority to determine whether the facilities are impactive to the neighbors or not.

It is suggested to remove the definition-item within parenthesis. Resulting definition is as below: **“A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system”**

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments:

It is not the threshold of 300 MW that qualifies an incident to cause a cascading outage. An option is to use a definition: **“The uncontrolled successive loss of Bulk Electric System elements that propagate beyond a defined area (balancing area's) boundaries”**

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

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- Yes       No  
 Comments

4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments:

It is proposed that definition of Widespread Area from NERC OLDTF Report (that was validated by RCWG at its December/03 meeting and was accepted by NERC OC at its March 2004 meeting) be used in the Standard 200 as well. It is stated as below:

**Widespread Area. An area that extends beyond any LOCAL AREA.**

**Local Area. . The portion of a WIDESPREAD AREA, whose boundaries are predetermined by appropriate analyses, where the impact of a CONTINGENCY or other event will not cause instability, uncontrolled separations or cascading outages to propagate beyond those predetermined boundaries (i.e., will not impact the overall reliability of a major portion of the Interconnection.) Impact to a WIDESPREAD AREA indicates significant impact to the INTERCONNECTION.**

OR

An alternative recommended approach/measure is that a wide area impact be defined with respect to occurrence of event impacting more than two RAs or BAs areas.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes       No  
 Comments:

a. The terms/definitions in the Standards should be consistent with the terms/definitions outlined in Functional Model (version 2) as well as those within other standards. As an example, there is an inconsistency in definition of Transmission Operator, i.e. Definition of Transmission Operator should be updated to reflect definition stated in version 2 of the Functional Model – i.e. "operates or directs the operation".

b). The definition of IROL presently given in the recent modified template P2T1 (System Operating/Interconnected Reliability Operating Limits Violations) may better serve the purpose in Std 200 as well. It is suggested to use the same definition with few modifications, as follows:

**“A subset of system operating limits, which if exceeded, could expose a Widespread Area of the Bulk Electrical system to instability, uncontrolled separations(s) or cascading outages.”**

***Questions about Requirement 201 — IROL Identification***

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of ‘shared’ Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes  No

Comments: It is recommended that the standards should be supported by appropriate technical documentation that is allowed under the standards process to ensure a complete understanding of the standard and its consistent applications.

***Questions about Requirement 201 — IROL Identification, continued***

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLS can be dynamic. The SDT modified the requirement so that instead of requiring a ‘list’ of IROLS, the RA must be able to identify the ‘current value’ of its IROLS. Do you agree with this change?

Yes  No

Comments

While the standard considers the requirements that IROLS can be dynamic, it also needs to provide guidance to operators to identify IROLS as they occur. Also refer to comments given in question 13.

8. Do you agree with the compliance monitoring process?

Yes  No

Comments

9. Do you agree with the levels of non-compliance?

Yes  No

Comments

10. Several balloters indicated a concern over coordination of IROLS between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLS?

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Yes                       No

Comments: We agree that there should be a mutual agreement on coordination among RAs. Furthermore, it is expected that a need for appropriate analysis/studies shall be outlined that could identify such common impactful facilities. Such requirements can be included in standard 600.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                               No

Comments

12 Other comments about Requirement 201:



**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

- (i) The RA shall provide the following information to its system operators:
- (a) The system conditions under which the Interconnection Reliability Operating Limit applies,
  - (b) The contingency that is the basis for the limit,
  - (c) The impact of exceeding the limit

Yes  No

Comments: We agree with these requirements and recommend that these should be specifically included in the standard 200.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

Yes  No

Comments: All directives issued by an Reliability Authority must be followed.

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds
- Change the minimum to 1 minute
- Change the minimum to 10 minutes

Comments: While the 30 seconds duration may be too short, and 10 minutes be too long, a duration of 2 minutes may be more appropriate.

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**12.** Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments:

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term ‘action plan’ that was used in the last version of this standard. Several other drafting teams have used the terms, ‘processes, procedures or plans’ to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, ‘action plan’ to ‘processes, procedures or plans’ throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the ‘technical content’ of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**

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Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

1. The footnote on Std 201 states that each IROL is developed by following the requirements in “Determine Facility Ratings, SOLs & Transfer Capabilities” i.e. Std 600. Such requirements with respect to IROL are not mentioned in existing standard Std 600, and it is expected that upcoming revised standard shall include this requirement otherwise it is recommended to delete the keynote from this standard 200.

2. The IMO supports the comments submitted by ISO/RTO Council- Standards Review Committee as well as the CP-9 Group.

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- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

***SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL***

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

***Levels of Non-compliance***

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

3. Analyses and Assessments			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
4. Actions			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.



5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b>STD Commenter Information (For Individual Commenters)</b>
<b>Name</b>
<b>Organization</b>
<b>Industry Segment #</b>
<b>Telephone</b>
<b>E-mail</b>

<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> Southern Company Services, Inc	<b>Group Chair:</b> Marc Butts	
	<b>Chair Phone:</b> 205-257-4839	
	<b>Chair Email:</b> mmbutts@southernco.com	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
Marc Butts	Southern Company Services	1
Raymond Vice	Southern Company Services	1
Dan Baisden	Southern Company Services	1
Jim Griffith	Southern Company Services	1
Phil Winston	Georgia Power Company	3
Jim Viikinsalo	Southern Company Services	1
Mike Miller	Southern Company Services	1
Monroe Landrum	Southern Company Services	1
Gwen Frazier	Southern Company Services	1
Steve Williamson	Southern Company Services	1
Rod Hardiman	Southern Company Services	1
Jonathan Glidewell	Southern Company Services	1
Dan Richards	Southern Company Services	1
Mike Hardy	Southern Company Services	1
David Majors	Georgia Power Company	3

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes       No

Comments:

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments: **We generally agree with the new definition. However, we want to point out that in some very large systems, such as Southern Company, that include large metropolitan areas there are substations that serve geographic areas with very large loads. There can be cases in such substations where a fault occurs and the breaker fails to operate. In this breaker-failure scenario, large loads can be dropped for a short period of time in a controlled fashion in order to prevent cascading outages or instability. Our concern relates to reporting this as a 'wide area impact' violation simply because it produces a loss of 300 MW, while being confined to a single substation or possibly even one or two large factories on a particular bus. We are aware that the cascading outage definition is 'magnitude and time' sensitive but we believe it should be tailored to allow rational management of local area outages of large substations if they are managed in a controlled manner.**

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

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- Yes       No  
 Comments

4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments: **Same concern as in #2 above.**

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.
- Yes       No  
 Comments: **all are improved and acceptable**

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes       No  
 Comments : **This requirement seems to overlap the requirements in the Coordinate Operations standard. The two standards should be coordinated to avoid unnecessary repetition.**

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of

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requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments :

**The Standard already states that RAs that share a facility, having an IROL, will agree to a 'process' for determining if it qualifies and what the value should be. Being more prescriptive doesn't add anything here.**

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments:

**If "posting" means naming the specific limiting elements then we think critical information such as this does nothing to improve reliability and may be to the detriment of Homeland Security. If this is only a 'numeric value' then perhaps this can be accommodated.**

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments: **This helps to identify the message as to relate to an IROL.**

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments; **One additional thought is to employ a deadband on both ends of the IROL violation (so that a value must be outside IROL for thirty seconds before it becomes and IROL violation). This would help avoid metering system errors triggering either the beginning or ending of an IROL.**

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45



**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments:

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard: **We would like to express our appreciation to the SDT for taking the time and trouble to revisit the comments on this standard. We realize the time it takes to participate on these teams and the dedication to it. While the last version of this standard was voted down this version is greatly improved and should pass the test. Thank you all for your efforts to listen to the industry and the people who operate the power systems on a daily basis and making this a workable product. We applaud you.**

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

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These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



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<b><i>STD Commenter Information (For Individual Commenters)</i></b>	
<b>Name</b>	<b>John Blazekovich</b>
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- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No  
 Comments

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments – **This definition should be consistent with the definition used by the Determine Facility Ratings, System Operating Limits & Transfer Capability SDT.**

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments – **Allowing an "acceptable time" of a Interconnection Reliability Operating Limit appears to be inconsistent with the definition of an IROL. If an IROL leads to instability, uncontrolled separation or cascading outage it seems to be unacceptable to allow any time limits to be associated with an IROL violation (i.e. any time spent over an IROL should be a violation).**

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes             No  
 Comments

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes             No

**X Comments – Interconnection Reliability Operating Limit - “that adversely impact the reliability of the bulk electric system” should be removed from the definition to make it consistent with the definition of a SOL, which it is.**

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes             No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes             No

**X Comments – Although we agree with the need to monitor the condition of the bulk power electric system, and can reasonably expect that IROL type scenarios and conditions can be studied in the “planning mode”, we have concerns**

that this Standard may be impossible to comply with on a “real time basis”. It appears that compliance with this standard will require executing literally hundreds, perhaps thousands of scenarios, it is unlikely one can identify IROLs ahead of time. Especially since each day presents a different system, both from generation pattern perspective and from transmission topology perspective.

8. Do you agree with the compliance monitoring process?

Yes       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes       No

Comments – **We suspect the public postings of IROL’s would be a dream come true for any terrorist considering an attack against the bulk power infrastructure of the United States and Canada.**

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

Yes       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

Yes       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

Yes       No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term ‘action plan’ that was used in the last version of this standard. Several other drafting teams have used the terms, ‘processes, procedures or plans’ to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, ‘action plan’ to ‘processes, procedures or plans’ throughout this requirement. Do you agree with this change?

Yes       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the ‘technical content’ of the standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.

Comments – **Before we determine how Exelon will cast it’s votes we would like to see revision to the definitions (as commented) and some direction on how compliance with this Standard will be accomplished on a “real time” basis.**

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.



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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**
- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

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Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.





**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes       No  
 Comments

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments

In concept this is OK, however, in current practice, simulation methods do not usually stress the system to the point of loss of load. Some of the mechanisms that might result in loss of load, such as collapse of an isolated island, may not be demonstrated with current modeling techniques. Current study techniques simulate only single contingency. Actual events which result in loss of 300 MW or more of networked system load are usually due to several contingencies occurring prior to system adjustment. There are too many possible scenarios to identify with current study resources. Such an approach is not recommended. Therefore the proposed criterion may not be practical to apply in studies.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes       No

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4. Several balloters indicated a continued misunderstanding of the difference between ‘wide area impact’ and ‘local area’. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was ‘widespread’. (Note that while the term, ‘wide area impact’ is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes       No  
 Comments

The definition of “Interconnection Reliability Operating Limit” seems clear. However, addition explanation beyond the definition is required to shed light on the intended meaning and application of the term. NERC should consider the creation of a IROL reference document along the lines of the NERC “Transmission Transfer Capability” reference document. The impression is given that IROLs are simply a subset of SOLs as determined using current methods (e.g. study procedures). For some IROLs this will be true, i.e., where current methods demonstrate a specific transfer capability is limited by stability. However, in situations where thermal limits are lower than stability limits, it is not current practice (in MAPP) to expend additional effort to identify higher stability limits. A straight forward interpretation of the definition would require this additional effort. Is this NERC’s intent? If so, NERC is introducing an additional requirement beyond current practice. This raises some important questions. How much extra effort is required and is it justified? Will monitoring IROLs derived in this way be fully effective to prevent instability, uncontrolled separation, or cascading outages? For example, simultaneously exceeding several thermal limits (individually SOLs not IROLs) may be approaching a voltage instability condition but this condition might not be recognized using the proposed IROL monitoring methodology. This is a good example of how an IROL might exist which will not be identified by current methods. The implications of the proposed IROL methodology have not been sufficiently explored and documented to ensure effective understanding and application within the electrical industry

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of ‘shared’ Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

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- Yes                       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

It is not clear how section 201 coordinates with Standard 600 (Determining limits) The requirement that IROLs should be current (reflect current system conditions, i.e. topology, loading, generation, etc.) is not mentioned under Requirements, it is only stated in item 3 of the measures. The difference between Measures (2) and (3) is not clear; they seem to be saying the same thing. The written structure of 201 might be improved by having a one-to-one correspondence between Requirements and Measures. Measure (1) (i) does not recognize that changes in topography in an adjacent RA area may impact the current IROL values.

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

The requirements in item 3 of this section should be expanded to include evidence of agreed procedures to identify IROLs for facilities shared by RAs and to ensure that IROLs reflect current system conditions.

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

There should be a requirement that the RA obtain agreement from its adjacent RAs on which facilities in the combined RA Areas are subject to IROLs, however the Standard to address this requirement should be Standard 100 "Coordinate Operations" and not this Standard.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a

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reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments

There should be a requirement to provide information about IROLs to any affected entities particularly Transmission Operator, Balancing Authority and Interchange Authority.

12. Other comments about Requirement 201:

- There needs to be a reference in 201 that the determination of IROLs should be consistent with Standard 600. In Standard 600 it should be explicitly required for the RA to demonstrate it has the tools, procedures and trained staff to do the required studies.
- The link between an Interconnection Reliability Operating Limit and the limits defined in standard 600 is tenuous – especially as the term “system operating limits” is not capitalized nor is there a reference to standard 600 in the definitions. Without that link, an IROL could be seen as a limit even in steady state (there is no contingency clearly associated with the definition – the consideration of contingencies is buried in standard 603). Presumably the link is believed to be made by calling IROLs a subset of SOLs. While Manitoba Hydro still believes that such limits are not a subset of SOLs but, rather, new limits based on similar studies, but with different criteria for acceptable performance (i.e., limits may be exceeded but cascading, instability and uncontrolled separation are BARELY avoided) there is value in discussing the IROL concept as put forward by the OWL team.

In standard 600, SOLs are established through consideration of all next single contingencies and for some regions, all multiple contingencies and for others, a set of credible multiple contingencies. Universally, a SOL must be established to avoid cascading, instability and uncontrolled separation. The question for the OWL group to consider is – how does standard 200 deal with the fact that in thermally-limited systems the margin between the SOL and cascading, etc., may be very large, while in stability-limited systems, there will still be some reliability margin, likely not a large one, between the SOL and the onset of cascading, etc. Thus, the increased risk of a problem if an SOL is violated is a function of the nature of the limit itself – the risk associated with stability limits is likely higher than for thermal limits.

Of the list of nasty events, the risk of instability and uncontrolled separation will be fairly evident from stability studies but the risk of cascading is dependent on thermal ratings, thermal overload and operator action to some extent. Since the SOL definition allows for system readjustments, while requiring limits not be exceeded, the risk of cascading increases if the required adjustments are not undertaken – and these may not be automatic actions. Note that the Standard 600 assumes that qualified ratings will be provided for all facilities (i.e, the rating value will have an associated time period – perhaps 15 minute, 2 hour, etc.) so that facilities ratings are assumed to be respected – there could an exception in the case of credible multiple contingencies, where a region may tolerate some facility violation if it can be managed expeditiously and not lead to cascading – MAPP

presently does this although the ratings being exceeded in the checking process are likely the long term values, not the short term values).

Since the Q&A document talks about increased RISK of cascading, rather than occurrence of cascading, the OWL team needs to clarify this potential source of confusion – there will almost always be increased risk of a problem as loadings increase or are left unchanged – but that opens the door to IROL evaluation having to consider the impacts of failures of the operator, etc. As such, any limit in the system could be considered an IROL, since, for some combination of contingencies, the unacceptable consequences could be seen. In fact, you could even consider the definition of an IROL as a steady state limit.

If the OWL team is adamant that IROLs are a subset of SOLs then the rest of the Standard 200 should be reviewed to ensure that risks are properly considered in the measurements and compliance process – right now some entities might be penalized for low risk events.

One way to manage the discrepancy would be for IROLs to be established at a known margin from the nasty three events – so the IROL for a thermally-limited system might be significantly higher than the corresponding SOL.

Until there is more clarity on the definition of an IROL, the implementation plan is suspect when it addresses the current state – there is a good chance IROLs are not being identified and calculated now, as expected by the standard.

- Manitoba Hydro is greatly concerned relative to the statement in the Q&A document regarding special protection schemes since the response to the question indicates that the special protection system should basically be ignored. The reality in MAPP is that such systems are put in place with a high degree of reliability and with the expectation that they will not fail. If Manitoba Hydro had to live with the situation as outlined in the response, we would be in violation every time we export more than, perhaps, 500 MW rather than the 2000 MW we can export presently. Is that really what the response was meant to say; or is the response really saying that you should know what the limits are if the special protection is out of service and respect those limits?

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**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

The wording of (a) could be improved. Suggest: "The system conditions under which exceeding the Interconnection Reliability Operating Limit could lead to instability, uncontrolled separation or cascading outages." As is, the wording of (a) could be interpreted to mean that it is ok to exceed the IROL under other system conditions. Suggest also that stating these items be required in the determination of all System Operating Limits (applicable to Standard 600).

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute

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- Change the minimum to 10 minutes
- Comments



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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

Manitoba Hydro agrees with the sanctions listed in the table below; however we believe the multiplications factors should continue to increase for event durations beyond 15 minutes. For example, the sanction for an event duration of one hour should be more severe than for an event duration of 15 minutes and so on.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	10
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	15
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	20
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	25
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	30
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30

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	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

Manitoba Hydro has technical concerns relative to the concept of IROL as referenced in this Standard. These concerns have been provided to the SDT in previous postings of this Standard and are further elaborated upon in question 12 of this comment document. If the SDT can satisfactorily address these concerns then Manitoba Hydro would support this Standard.

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial

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Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**
- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

Manitoba Hydro believes that this Standard should be field tested prior to implementation. This will ensure that all elements of the Standard are relevant to the operational reliability of the bulk electric system and can be implemented in a straightforward manner

In section 203 (d) Compliance Monitoring Process item (3) (i) it makes more sense that the RA provide evidence that Operational Planning Analysis occurs at least once a day and what the results were rather than indicating only the most recent analysis. Similar comment for 203 (d) (3) (iii). The evidence could be in the form of a log.

In section 205 (b) Measures, there is no measure to establish that the RA is notifying its Compliance Monitor when data is not provided or data collection issues are not resolved.

In section 205 (d) Compliance Monitoring Process, there is no check that the RA is notifying its Compliance Monitor when data is not provided or data collection issues are not resolved. There are no sanctions for not notifying

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.



5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes             No  
 Comments

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes             No  
 Comments

**We generally agree with the new definition. However, we want to point out that in some very large systems, such as Southern Company, that include large metropolitan areas there are substations that serve geographic areas with very large loads. There can be cases in such substations where a fault occurs and the breaker fails to operate. In this breaker-failure scenario, large loads can be dropped for a short period of time in a controlled fashion in order to prevent cascading outages or instability. Our concern relates to reporting this as a 'wide area impact' violation simply because it produces a loss of 300 MW, while being confined to a single substation or possibly even one or two large factories on a particular bus. We are aware that the cascading outage definition is 'magnitude and time' sensitive but we believe it should be tailored to allow rational management of local area outages of large substations if they are managed in a controlled manner.**

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

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Yes             No  
 Comments

4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes             No  
 Comments **See No. 2 above.**

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.
- Yes             No  
 Comments **All definitions are acceptable.**

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes                       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                      X No  
 Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- X Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- X Yes                       No  
 Comments

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15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds
- Change the minimum to 1 minute
- Change the minimum to 10 minutes
- Comments

12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes  No
- Comments

If the Maximum Value % over the Limit (measured after the event duration exceeds $T_v$ ) is: <small>Max Value % = (Max Value/ IROL limit -1)*100</small>	And the event duration exceeds its $T_v$ by __ minutes:	Then Multiply the Level 4 \$ sanction by:
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	10
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	15
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	20
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20



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	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

X Yes  No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

X Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard

No, I am not a member of the Ballot Pool for this standard

Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

X I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.

I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.

I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.

Comments

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19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**

Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

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(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>



<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments: 35 kV is too low for inclusion in the bulk electric system definition. The rest of this definition is less descriptive than the current definition in the NERC Operating Manual and contradicts the definition used in the NERC Planning Standards since 1995. The current definition in the NERC Planning Standards should be used as a starting point. Also, any definition of the Bulk Electric System should include the concept that 'networked' facilities (as opposed to radial) make up the BES and generally operated at voltages 100 kV or greater. The definition of the BES should not confuse FERC accounting rules/definitions with the functionality of the facilities themselves.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments: The proposed definition is unclear. Why the need to include load impacted and time requirements into the Cascading Outage definition? Is a 250 MW loss of load for 24 hours a cascading event? How about 1000 MW for 10 Minutes? The key thought of a Cascading Outage is that it is Unplanned and Uncontrolled outage over a wider area. The Facility Rating SDT is using as a definition of Cascading Outage is "The uncontrolled and unplanned successive loss of system elements triggered by an incident at any location." Is it really necessary to define cascading outage, if we can define as above when an SOL is to be considered an IROL? To be a cascading outage, multiple system elements must be involved and a series of uncontrolled events occur.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

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Yes       No

Comments: How do you consistently define what risk is acceptable and what risk is not? How do we ensure all the RA's evaluate risk using the same criteria and assessment process? The upper limit of 30 minutes is not a problem. However, why would any entity select a Tv less than 30 minutes? Shouldn't the Tv concept require you to take immediate action, if studies show that exceeding this IROL could lead to system instability or collapse? An entity should not be allowed to operate such that the occurrence of the next contingency results in a cascading blackout. Under such a scenario, the entity needs to take immediate action as soon as it is identified that they are in such a situation, not wait 30 minutes or wait until the contingency occurs. The problem with this Standard in its current form is that it has watered down an IROL event by tying it to loss of 300 MW of load. For a large system, that may be the loss of only 2 or 3 facilities or less. And it could include events that do not threaten the Interconnection. We would suggest that a Tv of no greater than 30 minutes is adequate for a SOL violation, but may be totally inadequate for a true IROL.

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments: The DOE threshold was never intended to imply that it defined a wide area impact. The definition for wide area impact needs to include the concept that multiple facilities are impacted, and exceeds a local geographic footprint. For a large entity, 300 MW can be as little as 1% of their peak load, arguably not a wide area impact for them. It make sense to set a quantative threshold. However, such threshold should not be so limiting as for larger systems to be able to be exceeded by a single local event.

What is missing in this Standard is the concept that we need to prevent events that put the interconnection at risk. Instead this Standard is focusing on events within a single Control Area or Transmission Operator footprint. For convenience, a 300 MW threshold has been suggested, but there is no reference to impact to the interconnection. I guess one can argue, that if we force such severely constrained operations at the local level, then we should never get to the point of placing risks on the Interconnection. Is that the point of this standard? If so, then this is not about operating to IROL's, but rather in operating well under SOL's so as to never approach an IROL.

This definition continues to miss the mark and remains unclear. If the SDT see a need to define a "Wide Area Impact" using a arbitrary load at risk level, may be acceptable. But under the current definition, is the loss of a 5000 MW load area for 12 minutes a wide area impact? Per definition the answer is no, practicality says 'yes'.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

Comments The definition of an IROL Event Duration lists a reset time of 30 seconds. In 204(b)(1)(ii) the reset period is given as one minute. Whichever is the proper intent of the SDT, 30 seconds or 1 minute is too short of a period for the reset. This should be on the order of 5 minutes or so in order to indicate that stable operating conditions have been attained.

The definition of an IROL continues to be unclear. For example: If an SOL (System Operating Limit) is a maximum permissible value so as to not exceed a facility rating or

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reliability criteria, then, if 'everyone' was doing their job there should never be an occurrence of an IROL. There should never be a situation where the outage of the next facility will lead to 'instability, uncontrolled separation, or cascading outages'. Therefore, for the system to be exposed to a IROL, a more restricting System Operating Limit must have already been exceeded, unidentified, or ignored.

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes  No

Comments: As per changes being made to NERC Policy 9, the default is you operate to the most conservative position. Thus, if one RC says the facility has an IROL, all RCs need to respect and operate to that IROL.

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes  No

Comments

8. Do you agree with the compliance monitoring process?

Yes  No

Comments: The phrase in 201(d)(1) referring to on-site reviews every three years be replaced with on-site reviews as needed. No reason for the standard to lock into either a 3-year cycle or should leave room for the industry to change the frequency, by a shorter cycle.

9. Do you agree with the levels of non-compliance?

Yes  No

Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes  No

Comments: I suggest this standard adopt the concept included in the newly revised Policy 9, which requires RCs to respect each others limits and operate to the most conservative position when disagreements arise.

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11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No

Comments: This is a bad idea with what should be obvious infrastructure security risks associated with it. However, the business community may want to see these limits posted. There should be mechanism for the commercial community to view such limits while observing the infrastructure security requirements.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments: Clear and concise communications is always the preference.

However, implied in this statement above, is that if the RC issues a directive and does not state it is related to an IROL, then the responsible RA is cleared of all fault, etc. if the RAI delays in following the directive. This is disturbing and part of the reason for some of the language change in the newly revised Policy 5 & 9.

**From newly revised Policy 5:**

**Complying with Reliability Coordinator directives.** The OPERATING AUTHORITY shall comply with RELIABILITY COORDINATOR directives unless such actions would violate safety, equipment, or regulatory or statutory requirements. Under these circumstances the OPERATING AUTHORITY must immediately inform the RELIABILITY COORDINATOR of the inability to perform the directive so that the RELIABILITY COORDINATOR can implement alternate remedial actions.

This type of language must find its way into the new Standards.

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.



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suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

Keep the minimum of 30 seconds

Change the minimum to 1 minute

Change the minimum to 10 minutes

Comments: Something on the order of 5-10 minutes may be a better indicator of true system recovery.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes  No  
 Comments:

There are no sanctions listed for a Maximum Value over 30%. The last stage should be set at equal to or greater than 25%.

The validity of the table is directly related to the definition of IROL. If an IROL is truly a significant interconnection event, similar in consequences to the August 14 event, then it doesn't matter if the IROL is violated for 30 minutes or 30 seconds, it was violated and it resulted in a blackout. If defined properly, a major portion of the interconnection would be jeopardized when an IROL is violated. If IROL were defined properly, the table would not be needed, as even exceeding the limit for a few minutes would be considered placing the Interconnection at extreme risk and thus subject to maximum penalty. Therefore a graduated table may be inappropriate. On the other hand, if IROL is defined as only 300 MW of load loss, then a graduated table may be more fitting.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35

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20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes  No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	



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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                      9 No

9 Comments

Please delete the parenthesis and add, “the operation of which would impact the operation of the Interconnection System of the Region, or as approved by a tariff filed with FERC”. The operation of a Bulk Electric System should have impacts on the operation of the Regional Interconnected System. In most systems in WECC, 35 kV would be considered distribution voltage.

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                      9 No

9 Comments:

Loss of 300 MW of load is not a measure or indication of cascading. Please change the definition to read, “The uncontrolled and unplanned successive loss of system elements triggered by an incident at any location. Cascading results in widespread electric service interruption, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies”.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

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Yes       No  
 Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                      9 No

9 Comments: For some systems, it is not uncommon to have loads of 300 MW or more located in a small area. Loss of 300 MW is therefore not an indication of wide area impacts. If implemented, such criteria could significantly increase workload and take resources away from work needed to identify, analyze, monitor and mitigate problems concerning IROLs, the violation of which could truly lead to cascading.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes                       No  
 Comments:

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

9 Yes                       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

9 Yes                       No

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Comments

8. Do you agree with the compliance monitoring process?

Yes  No

Comments

9. Do you agree with the levels of non-compliance?

Yes  No

Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes  No

Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes  No

9 Comments: Publicly posting IROLs could introduce market distortion. The information should be shared *only* with entities responsible for the reliable operation of the electric transmission system. In addition, if the IROL is to be "dynamic", this requirement may not be workable, or, even if workable, could be burdensome.

12. Other comments about Requirement 201:



**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes  No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes  No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10$ minutes	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15$ minutes	40
	Duration > $T_v + 15$ minutes	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

9 Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard

- No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

9 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.

9 Comments: We would like to emphasize that we would agree with the technical content only if our comments on the definitions are addressed.

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

9 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

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Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

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<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.



<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>
<b>Name</b>
<b>Organization</b>
<b>Industry Segment #</b>
<b>Telephone</b>
<b>E-mail</b>

<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b><i>STD Commenter Information (For Groups Submitting Group Comments)</i></b>		
<b><i>Name of Group:</i></b> New York Independent System Operator (NYISO)	<b><i>Group Chair:</i></b> Michael C. Calimano Chair Phone: 518-356-6129 Chair Email: mcalimano@nyiso.com	
<b><i>List of Group Participants that Support These Comments:</i></b>		
<b><i>Name</i></b>	<b><i>Company</i></b>	<b><i>Industry Segment #</i></b>
Greg Campoli	New York ISO (NYISO)	2
James Castle	New York ISO (NYISO)	2
John Ravalli	New York ISO (NYISO)	2
Karl Tammar	New York ISO (NYISO)	2
Robert Waldele	New York ISO (NYISO)	2

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes                       No  
 Comments

This definition should be reliability-“performance based” and references to tariffs should be removed. For reference, we offer the existing NPCC Definition for its **Bulk Power System** is;

“The interconnected electrical systems within northeastern North America comprising generation and transmission facilities on which faults or disturbances can have significant adverse impact outside of the local area. Local areas are determined by the Council members.”

The NYISO strongly urges the eventual adoption of a “performance based” definition not a “voltage based” one.

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

An event characterized by one or more of the following phenomena:

- the loss of **power** system **stability**
- cascading outages of circuits
- oscillations; abnormal ranges of frequency or voltage or both.

The NYISO believes that the standard should specify that the cascading outages not propagate beyond the local area (i.e. Control Area or balancing area). A threshold of 300 MW does not qualify an incident to be classified as a cascading outage. The loss of 300 MW of load may have nothing to do with cascading or uncontrolled successive losses, 300 MW of load may be lost under certain conditions, but it doesn’t necessarily pose a risk to the interconnection. We note that the definition of “Cascading Outage” as outlined in Standard 200 is different from that defined in

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Standard 600 (Develop Facility Ratings, ...). We recommend adopting a common definition as given in Std 600, including a minor modification, as follows. i.e.”

**“The uncontrolled successive loss of Bulk Electric System elements that propagate beyond a defined area (Balancing Area’s) boundaries.”**

In addition, specific examples about how IROLs are calculated, including specific contingency pair examples for things like thermal limits, are needed such that the whole industry can understand what an IROL is.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes                       No  
 Comments

NYISO agrees that the  $T_v$  should be limited to 30 mins. We recommend the last sentence to read “ $T_v$  shall not be greater than 30 minutes.”

Add discussion to Q&A document to give rationale as to why  $T_v$  under 30 minutes is required.

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4. Several ballots indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes             No  
 Comments

The NYISO agrees with the definition of Widespread Area from NERC OLDTF Report (that was validated by RCWG at its December/03 meeting and was accepted by NERC OC at its March 2004 meeting) be used in the Standard 200 as well. It is stated as below:

**Widespread Area** An area that extends beyond any LOCAL AREA.

**Local Area** The portion of a WIDESPREAD AREA, whose boundaries are predetermined by appropriate analyses, where the impact of a CONTINGENCY or other event will not cause instability, uncontrolled separations or cascading outages to propagate beyond those predetermined boundaries (i.e., will not impact the overall reliability of a major portion of the Interconnection.) Impact to a WIDESPREAD AREA indicates significant impact to the INTERCONNECTION.

OR an alternative option/suggestion is also proposed as follows:

“The impact of an incident resulting in uncontrolled successive loss of system elements in networked system and where the consequences of such significant adverse impact cannot be contained within a defined area that can be demonstrated by studies.

Wide area impact may also be defined correlating it to occurrences of event impacting more than one Reliability Authority.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes             No  
 Comments

The terms/definitions in the Standards should be consistent with the terms/definitions outlined in Functional Model (version 2). As an example, there is an inconsistency in definition of Transmission Operator, i.e. Definition of Transmission Operator should be updated to reflect definition stated in version 2 of the Functional Model – i.e. “operates or directs the operation”.

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Definitions should be in one place not in each standard and definitely should not appear if they are in the Functional Model document.

The definition of IROL presently given in the recent modified template P2T1 (System Operating/Interconnected Reliability Operating Limits Violations) may better serve the purpose in Std 200 as well. It is suggested to use the same definition with few modifications, as follows:

**“ A subset of system operating limits, which if exceeded, could expose a Widespread Area of the Bulk Electrical system to instability, uncontrolled separations(s) or cascading outages.”**

### Questions about Requirement 201 — IROL Identification

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of ‘shared’ Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes                       No  
 Comments

The wording should be clarified to only include those facilities that are subject to IROLs.

### Questions about Requirement 201 — IROL Identification, continued

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a ‘list’ of IROLs, the RA must be able to identify the ‘current value’ of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

While the standard considers the requirements that IROLS can be dynamic, it also needs to provide guidance to operators to identify IROLS as they occur. In addition, the System Operators must have the tools, training and information to deal with unforeseen circumstances and make the proper decisions to secure the system in an expeditious and orderly manner following a contingency or other event.

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

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The requirements need to be clear as to what exactly is needed. For example, what constitutes evidence that a list was updated from an auditing perspective?

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

There should be a mutual agreement on the process of coordination among RAs. The process could be that both Areas calculate a separate limit for common facilities based upon the internal transmission configuration. However, the Areas agree that they will operate to the more conservative limit of the different calculation results. Furthermore, it is expected that a need for appropriate analysis/studies shall be outlined that could identify such common impacted facilities. Such requirements can be included in standard 600.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments

All RAs should be aware of all IROLs but this information may not be appropriate for the “general public”. There is a concern over infrastructure security and issues related to CIPC.

12. Other comments about Requirement 201:



**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

This is a desirable addition, and should appear consistently throughout the document.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

All directives should be acted on irrespective if they are IROL or not. Statements such as this perhaps might be better documented in the Coordinate Operation Standards.

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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16. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

The NYISO agrees with the opinion, voiced by Mr. Gent's comments to the NERC BOT that monetary sanctions are ineffective to ensure compliance and that market mechanisms and letters of increasing severity are more effective.

There is an issue with the concept of a monetary sanction matrix and what its implications are. NPCC, has expressed concern over its inclusion and maintains that the use of market mechanisms where possible, as well as, letters of increasing degrees of severity and notifications to regulatory agencies are more effective in ensuring compliance. Failure of NERC to gain authority through reliability legislation could result in NERC pursuing actions to implement "Plan B," a "voluntary" approach affording NERC the authority to perform these types of monetary sanctions. NPCC has indicated that any posted Standard, with such a matrix, will not be supported by NPCC, or its members.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35

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20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

17. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**(Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?)

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

As indicated in our responses, the NYISO agrees with much of the technical content of this standard and offers suggestions and opinions on the portions we disagree with.

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**
- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

The NYISO contributed to and fully supports the comments of the ISO/RTO Council.

The NYISO concurs with the following comments submitted by NPCC:

- The footnote on Std 201 states that each IROL is developed by following the requirements in “Determine Facility Ratings, SOLs & Transfer Capabilities” i.e. Std 600. Such requirements with respect to IROL are not mentioned in Std 600, and it is expected that upcoming revised standard shall include this requirement otherwise it is recommended to delete the keynote from this standard 200.
- Owing to the fact that “ $T_v$ ” value can be smaller than 30 minutes, it is suggested to update the sub-section 203 (b) (ii) as follows: “ The Reliability authority shall conduct a Real-time Assessment periodically, once every 30 minutes or lesser as applicable in order to capture the allowable lesser duration  $T_{v,s}$ .
- General comment on the standard is it seems overly burdensome with documentation and less focused on performance.
- Examples regarding the individual definitions might be helpful to be added in an accompanying document.
- The Standard should address repeated, planned IROL violations that don’t exceed or consistently approach  $T_v$  and preventing this/discouraging this mode of operation from reoccurring. **It is not OK to exceed IROLs** and there are entities that frequently exceed them for short periods of time for economic or other reasons, they are not reportable because they do not exceed  $T_v$ . This behavior must be discouraged through measurement of frequency and severity of IROL through the reporting mechanisms outlined in this standard, and as outlined in new template P2 T1 “*System Operating/IROL Violations*”. In addition, there were no IROL  $T_v$  violations reported to NERC as a result of the events occurring on August 14<sup>th</sup> 2003 which implies either more stringent reporting is required or the IROL and  $T_v$  limit needs to be reevaluated.

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Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	



**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>	
<b>Name</b>	<b>Michael D. Zahorik</b>
<b>Organization</b>	<b>American Transmission Co</b>
<b>Industry Segment #</b>	<b>1</b>
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- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments 35 Kv seems rather low voltage. 50 or 100 Kv may be a better value.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments 300 mw is to low a value. There are instances that this amount of load can be lost and there are no network implications.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments Again 300 Mw is too low. There needs to be some definition of network impact. ATC has areas where 300 Mw can be lost and that loss will not affect the network.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes       No  
 Comments

8. Do you agree with the compliance monitoring process?

Yes       No

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Comments

9. Do you agree with the levels of non-compliance?

Yes  No

Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes  No

Comments Each RA should agree with the calling RA on the IRL.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes  No

Comments They can not all be determined prior to the fact. They will change. A cascade event generally requires multi elements which will increase the possibilities in a factorial fashion.

12. Other comments about Requirement 201:



**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments This information should be issued to the System Operator when the IRL is issued

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments Time of an event is not important until the violation of over 30 minutes has occurred. An IRL should be addressed ASAP, the solution should also be ASAP, with penalties after the 30 minutes.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes  No  
 Comments We call them contingency plans

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

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**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.



<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.

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<b><i>STD Commenter Information (For Individual Commenters)</i></b>
<b>Name</b>
<b>Organization</b>
<b>Industry Segment #</b>
<b>Telephone</b>
<b>E-mail</b>

<b>Key to Industry Segment #'s:</b>
1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

<b><i>STD Commenter Information (For Groups Submitting Group Comments)</i></b>		
<b><i>Name of Group:</i></b> Standards Review Committee for the IRC	<b><i>Group Chair:</i></b> Karl Tammar <b><i>Chair Phone:</i></b> 518-356-6205 <b><i>Chair Email:</i></b> ktammar@nyiso.com	
<b><i>List of Group Participants that Support These Comments:</i></b>		
<b><i>Name</i></b>	<b><i>Company</i></b>	<b><i>Industry Segment #</i></b>
Dale McMaster	AESO	2
Ed Riley	CAISO	2
Sam Jones	ERCOT	2
Don Tench	IMO	2
Dave LaPlante	ISO_NE	2
William Phillips	MISO	2
Karl Tammar	NYISO	2
Bruce Balmat	PJM	2
Carl Monroe	SPP	2

**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments: Please drop the parenthetical expression – we would ask NERC and the industry to develop “standard” definitions of the common terms to be used by the all standard drafting teams.

2. Several balloters indicated that they didn’t know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, “Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident” as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments: The definition should read as follows: The uncontrolled successive loss of Bulk Power Transmission elements that propagate beyond a balancing area's boundaries.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

$T_v$ : The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes             No

Comments: **Wide Area Impact should be defined in relation to a BA or RA footprint. The measure should be that a wide area event occurs when an event has an impact in two or more BA or RA areas.**

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes             No

Comments: **A definition of "shared facilities" is requested.**

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes             No

Comments: **The wording should be clarified to only include those facilities that are subject to IROLs.**

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes             No

Comments

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8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments: **There was no group consensus – financial penalties are an issue for some group members.**

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments: **What does “made public” mean? All RAs should be aware of all IROLs but this information may not be appropriate for the “general public”. There is a concern over infrastructure security and some concern voiced by a CIPC member.**

12. Other comments about Requirement 201: **None**

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments: **All directives issued by an RA must be followed without question, no matter what the circumstances. The explanations can be provided after actions have been taken and the problem solved.**

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments: **The SRC would like to see a value remain below its limit for two minutes with the understanding that if the value remains below the limit for two minutes, the reported end of the event or violation occurs at the time the value actually dropped below the limit.**

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments: **The group did not reach consensus.**

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45



**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard:** We are all members of the ballot pool and intend to vote individually. There was no discussion of the remaining questions as a group response seemed inappropriate.

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## FRCC Comments 4/14/04

### Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

#### **Major Changes Requested to this Standard:**

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

#### **The SDT’s most significant changes include the following:**

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

#### **Changes outside the Scope of the SDT:**

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

#### ***Wait for the Functional Model***

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

## FRCC Comments 4/14/04

### Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

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The Functional Model defines tasks and relationships. To date the Functional Model's tasks and relationships remain virtually the same as they were in the original version. The addition of separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

#### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

#### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

#### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

#### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

#### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

## FRCC Comments 4/14/04

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

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<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

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<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



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### ***STD Commenter Information (For Individual Commenters)***

**Name** Patti Metro on behalf of FRCC members

**Organization** Florida Reliability Coordinating Council (FRCC)

**Industry Segment #**

**Telephone** 813-289-5644

**E-mail** pmetro@frcc.com

### **Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities

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<b>STD Commenter Information (For Groups Submitting Group Comments)</b>		
<b>Name of Group:</b> <i>FRCC</i>	<b>Group Chair:</b> Chair Phone: Chair Email:	
<b>List of Group Participants that Support These Comments:</b>		
<b>Name</b>	<b>Company</b>	<b>Industry Segment #</b>
<i>Patti Metro</i>	<i>FRCC</i>	<i>2</i>
<i>Linda Campbell</i>	<i>FRCC</i>	<i>2</i>
<i>Steve Wallace</i>	<i>Seminole Electric Cooperative</i>	<i>4</i>
<i>Amy Long</i>	<i>Lakeland Electric</i>	<i>1</i>
<i>Richard Gilbert</i>	<i>Lakeland Electric</i>	<i>3</i>
<i>Ron Donahey</i>	<i>Tampa Electric Company</i>	<i>3</i>
<i>Beth Young</i>	<i>Tampa Electric Company</i>	<i>3</i>
<i>Roger Hunnicutt</i>	<i>Gainesville Regional Utilities</i>	<i>5</i>
<i>Roger Westphal</i>	<i>City of Gainesville</i>	<i>3</i>
<i>Greg Woessner</i>	<i>Kissimmee Utility Authority</i>	<i>3</i>
<i>Ben Sharma</i>	<i>Kissimmee Utility Authority</i>	<i>3</i>
<i>Garry Baker</i>	<i>JEA</i>	<i>1</i>
<i>Ed DeVarona</i>	<i>Florida Power &amp; Light Co.</i>	<i>1</i>
<i>Preston Pierce</i>	<i>Progress Energy Florida</i>	<i>1</i>
<i>Bob Remley</i>	<i>Clay Electric Cooperative</i>	<i>4</i>
<i>Joe Krupar</i>	<i>Florida Municipal Power Agency</i>	<i>3</i>
<i>Paul Elwing</i>	<i>Lakeland Electric</i>	<i>5</i>
<i>Joe Roos</i>	<i>Ocala Electric Utility</i>	<i>3</i>

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#### Questions about Definitions

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes       No  
 Comments

Suggested Definition:

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the interconnected electrical generation resources and the interconnected high voltage transmission system **above 100 kV**. Radial transmission lines serving only load with one transmission source are not included in this definition.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes       No  
 Comments

This definition provides guidelines to the RA for establishing limits and implementation of mitigation plans. For clarification, If an entity (Reliability Authority, Balancing Authority, Transmission Operator, etc...) is going to report an SOL to the RA and the RA will make

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the determination as to whether or not the SOL is indeed an IROL, should the clock not start until the determination is made by the RA? What happens if the RA takes 20-30 minutes trying to determine if an IROL exists?

4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

definition for Wide Area Impact?

- Yes       No  
 Comments

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes       No  
 Comments

#### **Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes       No  
 Comments

#### **Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes       No  
 Comments

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It appears that this change is reflected in Measure (2) and Noncompliance level (4)(i). There should be a similar change made to the requirements section of 201.

8. Do you agree with the compliance monitoring process?

Yes  No

Comments

(3) indicates that the Reliability Authority must provide certain information upon request of the Compliance Monitor, but does not indicate how long the Reliability Authority has to provide the information. A possible revision could be that "upon request the Reliability Authority will provide the following information to the Compliance Monitor within 5 business days".

9. Do you agree with the levels of non-compliance?

Yes  No

Comments

Level 3 non-compliance indicates that the list must be updated as with the measurements some type of time period should be included.

10. Several balloters indicated a concern over coordination of IROLs between RAs.

Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes  No

Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes  No

Comments

This type of information can be considered secure Critical Infrastructure Information as well as market sensitive and should not be publicly posted.

12. Other comments about Requirement 201:

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#### Questions about Requirement 202 — Monitoring

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

- (i) The RA shall provide the following information to its system operators:
- (a) The system conditions under which the Interconnection Reliability Operating Limit applies,
  - (b) The contingency that is the basis for the limit,
  - (c) The impact of exceeding the limit

Yes       No

Comments

It is very important for the system operator to have as much information available as possible to make decisions to ensure system reliability.

#### Questions about Requirement 204 — Actions

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

Yes       No

Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

Keep the minimum of 30 seconds

Change the minimum to 1 minute

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Change the minimum to 10 minutes

Comments

16. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

Yes

No

Comments

We had two members comment about the fixed sanction"

If the Maximum Value % over the Limit (measured after the event duration exceeds $T_v$ ) is: <small>Max Value % = (Max Value/ IROL limit -1)*100</small>	And the event duration exceeds its $T_v$ by __ minutes:	Then Multiply the Level 4 \$ sanction by:
0% < Max Value % ≤ 5%	$T_v < \text{Duration} \leq T_v + 5$ minutes	5
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	10
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	15
	Duration > $T_v + 15$ minutes	20
5% < Max Value % ≤ 10%	$T_v < \text{Duration} \leq T_v + 5$ minutes	10
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	15
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	20
	Duration > $T_v + 15$ minutes	25
10% < Max Value % ≤ 15%	$T_v < \text{Duration} \leq T_v + 5$ minutes	15
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	20
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	25
	Duration > $T_v + 15$ minutes	30
15% < Max Value % ≤ 20%	$T_v < \text{Duration} \leq T_v + 5$ minutes	20
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	25
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	30
	Duration > $T_v + 15$ minutes	35
20% < Max Value % ≤ 25%	$T_v < \text{Duration} \leq T_v + 5$ minutes	25
	$T_v + 5$ minutes < Duration ≤ $T_v + 10$ minutes	30
	$T_v + 10$ minutes < Duration ≤ $T_v + 15$ minutes	35
	Duration > $T_v + 15$ minutes	40
25% < Max Value % ≤ 30%	$T_v < \text{Duration} \leq T_v + 5$ minutes	30

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	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45



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#### **Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROs**

17. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

Yes       No

Comments

#### **Other Questions about this Standard**

18. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard

No, I am not a member of the Ballot Pool for this standard

Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.

I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.

I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.

Comments

20. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

#### 21. Other Comments about this Standard:

- The Compliance Monitoring Process for 202-208 requires that certain information be provided to the Compliance Monitor “upon request”, but does not indicate how long the Reliability Authority has to provide the information. A possible revision could be that “ upon request the Reliability Authority will provide the following information to the Compliance Monitor within 5 business days”.
- 204
  - Requirements
    1. Who is responsible for implementing an IROL mitigation plan? Transmission Owner? RA? Does the RA develop the plan or the Transmission Owner?
    2. Footnote 2 indicates the no action “may be acceptable as long as it is documented”, what type of documentation is required?
  - Non-Compliance Level 4 - Should be revised to indicate that the Reliability Authority is non-compliant because no actions were taken to mitigate an IROL or to document the violation.
- 205
  - Measure (3)(i) should be revised to indicate that the Compliance Monitor should be notified within five business days of determining the data issue could not be resolved.
  - Non-compliance levels – Why is there a Level 1 and Level 2, rather than Level 3 and Level 4. It appears that this information is very important to maintain a reliable system. In addition, if there is a measure for notifying the Compliance Monitor when data issues cannot be resolved, a level of non-compliance should be included when this notification is not provided.
- 207
  - Requirements and Levels of Non-Compliance – from this it appears that the Reliability Authority will work with other entities to develop processes, procedures, and plans, but the levels of non-compliance indicated that these activities could be developed with no input. What good is this if a Reliability Authority can't perform the mitigation? Seems very broad and burdensome to the Reliability Authority.
- 208
  - Requirements - The standard does not address seams issues. Although 201 requires Reliability Authorities that share facilities to develop IROL procedures and lists there needs to be a requirement included that would allow one Reliability Authority to give directives to another Reliability Authority.

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- Levels of Non-Compliance – If an entity does not follow the Reliability Authority directive, and the Reliability Authority does not have the ability to take action, other than the financial penalty there is no way to make entities comply with directives and reliability will be jeopardized.

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Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not 'stand-alone' — there are many inter-dependencies between these standards. It is not practical to 'wait' for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don't have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards 'one at a time' — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA's monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any 'emerging condition'. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT's reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>



<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

- Yes                       No  
 Comments

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes                       No  
 Comments

The threshold of 300 MW is to low. While it is understandable that the DOE requires that a loss of this size should be reported as a disturbance, it should not be the threshold of a cascading outage. A suggested MW level would be somewhere between 1000 and 5000 MW.

Could the group elaborate on the 15 minutes. How would an RA be able to determine if the load was going to be lost for more than 15 minutes? Consider whether an SOL, that is determined to be an IROL, go back to an SOL if an entity, through some process, stated that the load would be restored within 10 minutes.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

- Yes                       No  
 Comments

ATC support the position that an IROL should not be exceed by more than 30 minutes.

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments

"Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL."

The term 'Wide area impact' is in the list of definitions but that term does not appear anywhere in the definition of an IROL. If is not used in the standard or in the definition of an IROL then should it not be removed from the definitions list?

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes       No  
 Comments

ATC brought up a concern during the last posting about the definition of Real-Time Assessment.

It seems the SDT is attempting to solve two situations with this one definition.

The first goal is to have the RA perform this assessment once every 30 minutes to determine if the current system, using that RA's pre-defined contingency list, is in an IROL situation.

The second goal is to project over the time between this assessment and the next scheduled assessment to determine if the RA's area may be approaching or potentially in an IROL.

The term Real-Time Assessment seems to support the first goal but, because of its name, does not seem to support the second goal. What if an RA only did the first goal of assessment and did not perform the second?

Suggestions would be to:

Remove the term 'expected system condition' from the definition.

Create a new term and standard addressing the requirement for the RA to look over the interval between Assessments and determine if the RA's system may be approaching or potentially in an IROL.

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

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- Yes                       No  
 Comments

It's important that the RA's come to some type of commonality when determining if a shared facility should be subject to an IROL. This approach of an agreed upon process should be able to achieve that goal. Would this SDT put out a technical reference on how this type of an agreed upon process should read, with suggested inclusions and reasons for those suggestions?

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes                       No  
 Comments

Although the yes box has been check it does not mean that we support all of the revised changes. The question says the SDT modified the requirement "so that instead of requiring a 'list' of IROL's,..." but, in the measures, you require a list so a list is required. Our concern is not mainly of the list but the idea of how often the list needs to be updated. Since an IROL is a subset of SOL's, would it not be more efficient if the RA could identify those SOLs that are IROLs and show that they are monitoring them?

Measures #3

How does the SDT think that this measure can be demonstrated? In our opinion this may only be able to be demonstrated in front of the Compliance Monitor personally.

8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

(2) Is difficult to understand, confusing. Would the SDT please provide greater clarification?

(3) i. It is our opinion that this should be a level 4 not level 3. This is a situation were an RA has blatantly ignored this standard and put the Interconnection at risk.

(3) ii. Suggestion would be to remove "updated" and replace it with "being reviewed."

(4) ii. This should be changed to something where there is no evidence that the RA is actively reviewing its SOL to determine whether it should be classified as an IROL. It seems possible that an RA at a given audit time my not have any IROL and, because of that, no list exists which shows any IROL, thus mandating a Level 4 Noncompliance. In Question 7 you stated that a list was not required in requirements.

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No

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Comments

We are not convinced that a formal agreement has to be in place for adjacent RAs to determine if a facility should be subject to an IROL but there should be a mutually agreed upon process / procedure to identify and honor those facilities identified.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes

No

Comments

The RA should share those IROLs with its members and adjacent RA but public posting may prove to be overly burdensome to the RA's.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

We have not indicated a yes or no because the question is confusing. This addition does not appear in the 202 standard that this comment form accompanies. If you are asking if this should be added but has not been currently added to the standard, then ATC's opinion is that this should appear in the standard. The only suggestion is that item "(c)" is not needed. The idea behind moving an SOL into the IROL category is that it has a high potential to cause an adverse impact to the Interconnection.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45



**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term ‘action plan’ that was used in the last version of this standard. Several other drafting teams have used the terms, ‘processes, procedures or plans’ to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, ‘action plan’ to ‘processes, procedures or plans’ throughout this requirement. Do you agree with this change?

- Yes  No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the ‘technical content’ of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

ATC agrees with some of the technical content of this standard but is concerned that this question requires us to agree to all of the technical content of this standard and if we do not, we should check “I do not agree”. The SDT is on the correct path in achieving approval of this standard but this latest version presents some problems / concerns.

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**
- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

ATCs approach is to review each standard on its own merits.

**20. Other Comments about this Standard:**

202 Monitoring

The SDT switches between the terms “operations personnel” and “system operators.” It seems that both of these terms refer to the same people. If so, could the SDT choose a single term to refer to that group? If not, could the SDT explain the difference?

Noncompliance

(4) i. This seems to be identical to (ii). Could the SDT clarify the difference?

(4) iii. How would this be reviewed? It seems that this is a subjective item, would the SDT please clarify?

203 Analyses and Assessment

This goes back to our earlier comments about the definition of a Real-Time Assessment. It seems what the SDT is attempting to do is perform two different studies in this one requirement.

Compliance Monitoring Process

(3) ii. The Operational Planning Analysis is a study of the next day using forecasted data, transmission outage data, and generation outage data and can only attempt to see what may happen the next day. Given that statement, how can the RA be assured that it will exceed an IROL? Suggestion: change the “will exceed” to “may exceed.”

(3) iv. Remove the statement “or is expected to exceed any IROLs.” The Real-Time assessment should be limited to real-time time frame and should be extended to review the time between Real-Time Assessments.

Non Compliance

(3) i. Is the “time” that an Operational Planning Analysis or Real-Time Assessment was conducted sufficient enough indication that Operational Planning Analysis or Real-Time Assessment was conducted?

204 Actions

(1) i. ATC is troubled by the term may be exceeded. How can an RA be required to perform action on a “may” situation? Suggestion would be to have the RA notify other RA along with members in the RA’s area that an IROL was not yet exceeded but the potential for an IROL to be exceeded was identified.

We would point out that there is no noncompliance level for the above concern so therefore should this may not be appropriate as a NERC standard.

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

## **Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

**Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard**

Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

5. Data Specification			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
6. Data Provision			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



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<b><i>STD Commenter Information (For Individual Commenters)</i></b>	
<b>Name</b>	<b>Mark Fidrych</b>
<b>Organization</b>	<b>Western Area Power – CM</b>
<b>Industry Segment #</b>	<b>1</b>
<b>Telephone</b>	<b>970-461-7240</b>
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- Key to Industry Segment #'s:**
- 1 – Trans. Owners
  - 2 – RTO's, ISO's, RRC's
  - 3 – LSE's
  - 4 – TDU's
  - 5 - Generators
  - 6 - Brokers, Aggregators, and Marketers
  - 7 - Large Electricity End Users
  - 8 - Small Electricity Users
  - 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes       No

Comments The Voltage level appears too low, but some criteria needed to be established.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

- Yes       No  
 Comments

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

- Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

- Yes       No  
 Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

- Yes       No  
 Comments

8. Do you agree with the compliance monitoring process?

- Yes       No  
 Comments

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9. Do you agree with the levels of non-compliance?

Yes  No

Comments The analyses and assess. require once/dy. In some circumstances, where system conditions do not change and the IROL has ample operating room, the requirements do not acknowledge that mode explicitly.

10. Several balloters indicated a concern over coordination of IROLs between RAs.

Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes  No

Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes  No

Comments

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments Under dynamic conditions this is impossible to accomplish.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

Yes  No

Comments I agree with the concept, I think we need to spend some time on the multipliers.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**



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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

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(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.





**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                      X  No

Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes                       No

Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes                      X  No

Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

X  Yes                       No

Comments

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8. Do you agree with the compliance monitoring process?

X  Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

X  Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

X  Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                      X  No  
 Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

12. Other comments about Requirement 201: None

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

Yes                       No  
 Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments: The AESO supports comments of the Standards Review Committee of the ISO/RTO Council.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments: Propose sanctions are too severe. Suggest using multiples of 2's rather than 5's. I.e. the first group will be 2, 4, 6, 8 and the next group be 4, 6, 8, 10 etc.

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

X  Yes  No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

X  Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

X  I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

X  I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of



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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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<b>Requirements</b>	<b>First Offense</b>	<b>Second Offense</b>	<b>Reasoning</b>
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	

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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments: We feel that this definition could be interpreted as including all facilities at and above 35kV whether they are transmission or not. The Bulk Electric System should be defined as 100kV and above network transmission system or lower voltage facilities that pass the FERC seven factor test.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments: Determining the amount of load loss and restoration time in a pre-contingency study is not possible with the current real-time analysis tools.

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments: This definition would qualify the loss of a single industrial customer (greater than 300MWs) as a wide area impact. A wide area impact should be defined as the loss of multiple substations or facilities than result in multiple customer outages totaling 300MWs or greater.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes       No

Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes       No

Comments



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8. Do you agree with the compliance monitoring process?

- Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

- Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

- Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

- Yes                       No  
 Comments: Identifying the most vulnerable points of the Interconnected transmission system is an invitation to sabotage. System operating limits are appropriate for posting, but that subset of limits that are IROLs should not be identified publicly. This should be confidential information.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:

## Comment Form for 3<sup>rd</sup> Posting of Operate within Interconnection Reliability Operating Limits Standard

Note – This form is to comment on version 3 of the Monitor and Assess Short-term Transmission Reliability – Operate Within Transmission Limits Standard (now called ‘Operate Within Interconnection Reliability Operating Limits’.)

The latest version of this Standard (OPER\_WITHN\_LMTS\_05\_03) is posted on the Standards website at: <http://www.nerc.com/~filez/standards/Monitor-Assess.html>

E-mail this form between March 1–April 14, 2004, to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “Comments” in the subject line.

If you have any questions about this Standards draft comment form, please contact Gerry Cauley, the Director-Standards at 609-452-8060 or [Gerry.Cauley@nerc.net](mailto:Gerry.Cauley@nerc.net)

### Major Changes Requested to this Standard:

The Standards Drafting Team made several changes to this standard, based on the comments submitted during the first ballot of this standard. You can see the Standards Drafting Team’s consideration of every comment submitted with a ballot at:

<http://www.nerc.com/~filez/standards/Monitor-Assess.html>

### The SDT’s most significant changes include the following:

- Clarified the definitions of ‘widespread impact,’ ‘cascading outages’ and ‘bulk electric system’ so they are measurable.
- Modified the definition of  $T_v$  to align its definition with interconnection risk rather than sanctions and to indicate that  $T_v$  can’t exceed 30 minutes.
- Modified Requirement 201 for IROL Identification to better reflect the dynamic nature of IROLs
- Modified Requirement 201 to add language to ensure that RAs that share a Facility (or group of Facilities) have an agreed upon process for determining if the Facility is subject to IROLs and for developing the IROL and its  $T_v$
- Modified Requirement 204 for RA Actions to indicate that the RA must act ‘without delay’ to prevent or mitigate instances of exceeding IROLs
- Modified the sanction associated with operating outside an IROL for time greater than  $T_v$  to make the sanction proportional to both the magnitude and the duration of the incident.

### Changes outside the Scope of the SDT:

Several Balloters asked the SDT to make some changes that are outside the scope of the SDT.

These changes include the following:

- Wait until the Functional Model is modified, re-approved and/or better understood
- Wait until related Standards are approved
- Wait until Field Testing is conducted
- Expand the scope to include operating outside all System Operating Limits — not just those that could cause instability, cascading outages or uncontrolled separation

### *Wait for the Functional Model*

The SDT cannot guarantee that the Functional Model will never change. However, the SDT can state that the Functional Model is the approved basis for writing the current standards. NERC’s current Policies and Standards were based upon the concept of a control area. Recent events (such as the creation of GENCOs, TRANSCO and generation-only control areas) have shown that NERC’s vision of control area is no longer a valid basis for writing standards. The task-based Functional Model is the approved alternative.

The Functional Model defines tasks and relationships. To date the Functional Model’s tasks and relationships remain virtually the same as they were in the original version. The addition of

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separating the tasks between owner and operator did not invalidate the Functional Model. Neither did the inclusion of the Planning Functions invalidate the Functional Model. If new subdivisions of tasks are required, then the standards will have to be amended appropriately. However, to wait until everyone can agree on the future of our industry would commit NERC to permanent inaction.

### ***Wait for Related Standards***

These new standards are not ‘stand-alone’ — there are many inter-dependencies between these standards. It is not practical to ‘wait’ for one standard to be completed before finalizing another standard. Because we are developing these standards in parallel, rather than in series, the Standard Drafting Teams don’t have control over the completion of any other standard. The NERC BOT directed the teams to proceed with development of standards without delay — and that is what the drafting teams are trying to do. If NERC had more time to develop a new set of standards, then it would be better to develop the standards ‘one at a time’ — but the industry has an urgent need for a new set of standards to be in place as soon as possible.

### ***Wait for Field Testing***

The Director-Compliance is responsible for working with the Standards Authorization Committee in determine if there is a need to conduct field-testing of a standard. In this case, the Director-Standards recommended against field-testing, and this recommendation was supported by the Standards Authorization Committee. The decision to conduct field-testing is not within the scope of the SDT.

### ***Expand the scope to include all System Operating Limits (SOLs)***

The scope of this standard was limited to the subset of SOLs that are IROLs. The SDT recognizes that exceeding **any** SOL is unacceptable, but adding requirements to this standard that address exceeding SOLs is outside the scope of the associated SAR. The SDT is drafting another SAR to address monitoring and operating within SOLs.

### **SDT Assumptions about the RA’s monitoring and directing actions to prevent exceeding an IROL**

The SDT developed this standard with an assumption that entities would act honorably and with integrity. This standard requires that IROLs have both a magnitude and a duration component ( $T_v$ ). The SDT assumes that RAs following this standard will not exceed any IROL for any ‘emerging condition’. RAs should be constantly monitoring their RA Area and should take pre-emptive actions to prevent ever exceeding an IROL. Emerging situations should never result in an instance of exceeding an IROL. However, if a plane hits a set of transmission lines, an IROL may be exceeded and actions need to be taken without delay. For the unusual situation such as the plane crash, an IROL may be exceeded but not for a time greater than its  $T_v$ .

### **Levels of Non-compliance**

Several balloters asked that additional levels of non-compliance be added to the standard. Where this seemed reasonable, additional levels were added. The table on the following pages provides a comparison of the levels of non-compliance for all the requirements in this standard, with the SDT’s reasoning for the assignments.

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Requirements	First Offense	Second Offense	Reasoning
<b>1. IROL Identification</b>			
(Level1) No process for addressing 'shared' Facilities	Letter to VP	Letter to VP	Shared facilities require cooperation between RAs. Not documenting a process for addressing these shared facilities is not as bad as not having any evidence that the RAs have agreed on which Facilities are subject to IROLs. Not having 'joint' agreement on which shared Facilities are subject to IROLs is a less severe infraction than not having a list of Facilities subject to IROLs for the RA's own Reliability Area.
(Level 2) No evidence that the RAs with a shared Facility have agreed on whether that Facility is subject to an IROL	Letter to VP	Letter to CEO \$1,000	
(Level 3) One or more IROLs had a T <sub>v</sub> greater than 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Having a T <sub>v</sub> greater than 30 minutes may pose an unacceptable risk to the interconnection.
(Level 3) List of Facilities subject to IROLs not updated	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	The System Operators need to know this information – having an out of date list is not good, but it is better than not having any of the data
(Level 4) No list of facilities subject to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	The System Operators need this information – without knowing what facilities are subject to IROLs, the System Operators may allow a limit to be exceeded for so long that it causes a cascading outage . . .
(Level 4) Unable to produce current IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>2. Monitoring</b>			
(Level 2) List of Facilities subject to IROLs not available for Real-time use	Letter to VP	Letter to CEO \$1,000	This information is needed for situational awareness. If operations personnel are aware of the facilities subject to IROLs they will pay closer attention to these facilities. However, not having this information is not as bad as not having current IROLs for real-time use.
(Level 4) IROLs not available to system operators for real time use	Letter to CEO \$2,000	Letter to CEO \$4,000	System Operators need to constantly monitor real time data and compare this against IROLs. If this isn't done, then there is a risk that a critical limit will be approached or exceeded and the system operator won't be aware of the condition – if left unknown, the limit could cause a cascading outage, . . .
(Level 4) Real-time data can't be compared to IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	
(Level 4) System Operators not monitoring real-time data against IROLs	Letter to CEO \$2,000	Letter to CEO \$4,000	



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<b>3. Analyses and Assessments</b>			
(Level 3) Can't show that an operational planning analysis was done once/day	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	Conducting the analyses and assessments is critical to identifying conditions that exist or may exist in the near future. If some analyses were 'skipped', this is not acceptable — the entity was 'lucky' and the sanction is a warning.
(Level 3) Can't show that a real-time assessment was done every 30 minutes	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	
(Level 4) Didn't do an operational planning analysis or a real-time assessment well enough to know if there are any actual or potential instances of exceeding an IROL.	Letter to CEO \$2,000	Letter to CEO \$4,000	Analyses and assessments need to result in the system operator KNOWING whether there is an actual or potential problem — if the analyses and assessments don't result in the system operator KNOWING whether there is an actual or potential problem, then this is the same as not having done the analysis or assessment.
<b>4. Actions</b>			
(Level 1) IROL exceeded for a time less than or equal to $T_v$ and no documentation to indicate actions taken or directives issued to mitigate the instance.	Letter to VP	Letter to VP	All instances of exceeding an IROL are serious. The Compliance Monitor needs to use the RA's documentation as a reference in auditing other entities to verify that the RA's Directives have been followed. Data relative to IROLs must be collected so that it is available for reliability studies.
(Level 4) Exceeded an IROL's magnitude and duration components.	Letter to CEO Variable \$\$ fine	Letter to CEO Variable \$\$ fine	This is the worst possible violation in this standard — and carries the harshest sanction. If an IROL is exceeded, then the interconnection has been placed in an unacceptable risk.

<b>5. Data Specification</b>			
(Level 1) Specification incomplete	Letter to CEO	Letter to CEO	<p>The data specification needs to be complete. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction recognizes that some data that is supplied may not be documented on a specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p> <p>The RA is strongly motivated to perform well and is required to meet stringent certification requirements so the RA will most certainly request the data it needs.</p>
(Level 2) Specification not distributed	Letter to VP	Letter to CEO \$1,000	<p>The data specification needs to be distributed so other entities can provide the needed data. Most entities already exchange data, and some entities may not have a 'complete' data specification. A lower level sanction was applied in recognition that some entities may already be exchanging data without a documented data specification, and there may need to be some 'warnings' to motivate the RA to improve its documentation.</p>
<b>6. Data Provision</b>			
(Level 4) Data not provided as specified and situation not resolved	Letter to CEO \$2,000	Letter to CEO \$4,000	<p>If data is needed and specified in a written document, then it does need to be provided. Not providing data that has been formally requested is serious because it can jeopardize the RA's ability to accurately monitor and assess its Reliability Area. In most cases, the Compliance Monitor only finds out about this violation if the RA tries to resolve the discrepancy, but the RA is unable to obtain the data it needs.</p>

<b>7. Procedures, Processes or Plans for Preventing and Mitigating Instances of Exceeding IROLs</b>			
(Level 1) Exist but not coordinated with all with all other RAs	Letter to VP	Letter to VP	If an entity has a document, then that entity has gone through the process of determining appropriate actions and has provided the document to its system operators for real time use. If the document isn't coordinated with other entities that need to act as part of that document, then there needs to be some sanction to motivate the involved entities to 'sign on the dotted line'. Without some formal agreement between all involved entities, there is no assurance that everyone involved will act as needed without unnecessary delays. These sanctions recognize that involving some of the other entities that need to act as part of the 'plan' is not as unacceptable as not involving any of the other entities that need to act as part of the 'plan'.
(Level 2) Exist but not coordinated with any other RAs	Letter to VP	Letter to CEO \$1,000	
(Level 3) Documents exist but don't address both preventing and mitigating IROLs	Letter to CEO \$1,000 fine	Letter to CEO \$2,000 fine	These sanctions recognize that having some documents is better than having no documents — but every RA should have documents that can be followed so that the RA's staff will be prepared.
(Level 4) Documents do not exist	Letter to CEO \$2,000	Letter to CEO \$4,000	
<b>8. RA Directives</b>			
(Level 1) Documentation incomplete	Letter to VP	Letter to VP	All operations involving IROLs are serious. The Compliance Monitor needs to review the documentation in concert with the RA's documentation for the same incident, to verify that the RA's Directives have been followed.
(Level 4) Didn't follow directives	Letter to CEO \$2,000	Letter to CEO \$4,000	This is an extremely serious violation since not following the RA's directives can jeopardize the reliability of the interconnection.



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments Above 35 kV is OK, but I would prefer that the limit be above 59 kV.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments I would suggest the definition be changed to: The uncontrolled or unplanned successive loss of system elements triggered by an incident at any location. Cascading Outages result in Wide-Area Impacts, which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes       No

Comments This definition does not contain any energy values. Taking this definition literally would mean if a system lost 10,000 MW and was able to restore it in 14 minutes (admittedly, a highly unlikely occurrence), the outage would not be considered to have a wide area impact. A better definition would include an energy component, for example, 75 MWh. The revised definition would read: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes or the loss of 75 MWh or more during a time interval of 15 minutes or less.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes       No

Comments

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes       No

Comments

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

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Yes                       No  
 Comments

8. Do you agree with the compliance monitoring process?

Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments Public posting should not be necessary as long as all entities that have a need to know the IROLs can have access to them.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments



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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes
  No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.  
 Comments

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

20. Other Comments about this Standard:



**Questions about Definitions**

1. The SDT revised the definition of Bulk Electric System to clarify what portion of the electric system was included. Do you agree with the revised definition?

**Bulk Electric System:** A term commonly applied to the portion of an electric utility system that encompasses the electrical generation resources and high voltage transmission system (above 35 kV or as approved in a tariff filed with FERC).

Yes                       No

Comments I agree with OPS that 35kv is too low. This definition should define the level as 100 kV and above.

2. Several balloters indicated that they didn't know if a studied event would meet the old definition of a cascading outage. The SDT adopted criteria currently used by the Department of Energy as the threshold for disturbance reporting. DOE uses, "Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident" as one of its thresholds for reporting disturbances.

If a study shows that exceeding an SOL will result in the uncontrolled successive loss of 300 MW or more of networked system load for 15 minutes or more — then that SOL is considered an IROL. Do you agree with the revised definition?

**Cascading Outages:** The uncontrolled successive loss of system elements triggered by an incident at any location that results in the loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments:

I like this definition. Although 300 is an arbitrary number (why not 500 for example), I like the fact that it is quantitative and easily measurable – after the fact at

3. Several balloters indicated a preference for a definition of  $T_v$  that referenced a link to risk rather than a link to a sanction. Most balloters indicated a preference for an upper limit to  $T_v$ . Do you agree with the revised definition?

**$T_v$ :** The maximum time that an Interconnection Reliability Operating Limit can be exceeded before the risk to the interconnection becomes greater than acceptable.  $T_v$  may not be greater than 30 minutes.

Yes                       No

Comments

I agree with this definition. I would only add that we should try and focus on consistency. I think  $T_v$  is being used in other standards, so I would recommend that these definitions are either coordinated or that different variables are used.

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4. Several balloters indicated a continued misunderstanding of the difference between 'wide area impact' and 'local area'. The SDT modified the definition in an attempt to make the definition more objective. The Department of Energy currently requires that any single incident involving the uncontrolled loss of 300 MW or more of firm system loads be reported on form DOE EIA 417. The SDT adopted this criterion as the threshold for determining whether the impact of an event was 'widespread'. (Note that while the term, 'wide area impact' is not used in this standard, it is used in the definition of an IROL.) Do you agree with the revised definition for Wide Area Impact?

Wide Area Impact: The impact of a single incident resulting in the uncontrolled loss of 300 MW or more of networked system load for a minimum of 15 minutes.

Yes                       No

Comments Having agreed with the definition above, I am inclined to agree here as well.

5. Several other definitions had minor changes. Please identify any definitions you feel need to be revised, and if possible suggest a revision.

Yes                       No

Comments

I recommend that the drafting team stays away from defining terms that are already defined. For example, I think that Generator Owner, Reliability Authority Area, and Transmission owner are already defined in the functional model. Also, I recommend that the drafting team communicate with other drafting teams and make sure that the definitions used here are consistent throughout the standards – Performance-reset Period for example

**Questions about Requirement 201 — IROL Identification**

6. Do you agree with the following new measure developed to support the requirement that addresses the handling of 'shared' Facilities?

The Reliability Authorities that share a Facility (or group of Facilities) shall have an agreed upon process for determining if that Facility (or group of Facilities) is subject to an Interconnection Reliability Operating Limit and for determining the value of that Interconnection Reliability Operating Limit and its associated  $T_v$

Yes                       No

Comments

I agree with this in principle, but real life has shown that agreements on limits and processes are not always possible. I recommend that the drafting team adds a clause directing the RAs to use the process that results in the lower value for the limit if agreement can not be reached. They should keep using that limit until agreement is reached.

**Questions about Requirement 201 — IROL Identification, continued**

7. Several balloters asked that the SDT to change this requirement to better reflect that IROLs can be dynamic. The SDT modified the requirement so that instead of requiring a 'list' of IROLs, the RA must be able to identify the 'current value' of its IROLs. Do you agree with this change?

Yes                       No  
 Comments

I agree with this, but that was not the way I understood it when I read the standard. The "current value" to me means what this value is right now. I recommend the word "current" be changes to something like "set"

8. Do you agree with the compliance monitoring process?

Yes                       No  
 Comments

9. Do you agree with the levels of non-compliance?

Yes                       No  
 Comments

10. Several balloters indicated a concern over coordination of IROLs between RAs. Do you think the standard should include a requirement that the RA obtain agreement from its adjacent RAs on which Facilities in the combined RA Areas are subject to IROLs?

Yes                       No  
 Comments I recommend that the drafting team adds a clause directing the RAs to use the process that results in the lower value for the limit if agreement can not be reached. They should keep using that limit until agreement is reached. They should push for agreement.

11. Several balloters requested that the SDT change the standard to include a requirement that RAs publicly post their IROLs. The SDT could not identify a reliability-related reason to support this. Do you want the standard to require public posting of IROLs?

Yes                       No  
 Comments

NO. I agree with the SDT that there is no reliability reason to support this.

12. Other comments about Requirement 201:

**Questions about Requirement 202 — Monitoring**

13. Several balloters recommended the following addition to this requirement. Do you agree with this addition?

(i) The RA shall provide the following information to its system operators:  
(a) The system conditions under which the Interconnection Reliability Operating Limit applies,  
(b) The contingency that is the basis for the limit,  
(c) The impact of exceeding the limit

- Yes                       No  
 Comments I agree with providing the system controllers with as much information as possible without overloading them. If the SDT believes that this information aggregated with all the other information System controllers get would not be too much to handle then I'll agree with this requirements.

**Questions about Requirement 204 — Actions**

14. Several balloters commented about the level of documentation required in this standard. The SDT noted that without additional clarification, the entity that receives an RA's directive may not realize that the directive is related to an IROL. To improve the 'situational awareness' of directives related to IROLs, the SDT added this requirement. Do you agree with the addition of this requirement?

Each directive issued relative to an IROL shall include a statement to inform the recipient that the directive is related to an IROL

- Yes                       No  
 Comments

15. Some balloters suggested that the SDT modify the criteria for determining the duration of an IROL event. The language currently in the standard is shown below. One balloter suggested that the '30 seconds' be modified to '1 minute' – another balloter suggested that a longer duration should be required and suggested 10 minutes. The 30 seconds was intended to represent the maximum duration associated with a 'bad telemetry scan.'

The duration of the event shall be measured from the point when the limit is exceeded to the point when the system has returned to a state that is within the Interconnection Reliability Operating Limit for a minimum of 30 seconds.

- Keep the minimum of 30 seconds  
 Change the minimum to 1 minute  
 Change the minimum to 10 minutes  
 Comments



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I believe the 1 minute limit is reasonable and stays in line with other standards under development.

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12. Several balloters requested that the sanction for exceeding an IROL for time greater than the IROL's  $T_v$  be modified so that the sanction is proportional to both the magnitude and the duration of the event. The SDT modified the sanction so that it would be the greater of the fixed dollar sanction listed in the matrix, or the dollar amount that corresponds to the magnitude and duration of the event as highlighted in the following table.

Do you agree with this table?

- Yes                       No  
 Comments

<b>If the Maximum Value % over the Limit (measured after the event duration exceeds <math>T_v</math>) is:</b> Max Value % = (Max Value/ IROL limit -1)*100	<b>And the event duration exceeds its <math>T_v</math> by ___ minutes:</b>	<b>Then Multiply the Level 4 \$ sanction by:</b>
$0\% < \text{Max Value \%} \leq 5\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	5
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	10
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	15
	$\text{Duration} > T_v + 15 \text{ minutes}$	20
$5\% < \text{Max Value \%} \leq 10\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	10
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	15
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	20
	$\text{Duration} > T_v + 15 \text{ minutes}$	25
$10\% < \text{Max Value \%} \leq 15\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	15
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	20
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	25
	$\text{Duration} > T_v + 15 \text{ minutes}$	30
$15\% < \text{Max Value \%} \leq 20\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	20
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	25
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	30
	$\text{Duration} > T_v + 15 \text{ minutes}$	35
$20\% < \text{Max Value \%} \leq 25\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	25
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	30
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	35
	$\text{Duration} > T_v + 15 \text{ minutes}$	40
$25\% < \text{Max Value \%} \leq 30\%$	$T_v < \text{Duration} \leq T_v + 5 \text{ minutes}$	30
	$T_v + 5 \text{ minutes} < \text{Duration} \leq T_v + 10 \text{ minutes}$	35
	$T_v + 10 \text{ minutes} < \text{Duration} \leq T_v + 15 \text{ minutes}$	40
	$\text{Duration} > T_v + 15 \text{ minutes}$	45

**Questions about Requirement 207 — Processes, Procedures or Plans for Preventing and Mitigating IROLs**

16. Several balloters asked for more clarification on the term 'action plan' that was used in the last version of this standard. Several other drafting teams have used the terms, 'processes, procedures or plans' to clarify that the document required may be general in nature or very specific, as long as the document addresses the required topic. In response, the SDT changed the phrase, 'action plan' to 'processes, procedures or plans' throughout this requirement. Do you agree with this change?

- Yes                       No  
 Comments

**Other Questions about this Standard**

17. Are you a member of the Ballot Pool (or do you represent a member of the Ballot Pool) for this standard?

- Yes, I am a member of the Ballot Pool, or I represent a member of the Ballot Pool for this standard  
 No, I am not a member of the Ballot Pool for this standard  
 Comments

18. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), do you agree with the technical content of this standard? Note that the technical content of the standard consists **solely** of the individual Requirements and their associated Measures — the Compliance Monitoring Process, Levels of Non-compliance and Sanctions are **not** considered part of the 'technical content' of the standard.

- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do agree** with the Technical Content of this standard.  
 I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I do not agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do agree** with the Technical Content of this standard.  
 I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool for this standard. **I do not agree** with the Technical Content of this standard.

Comments : I'm not sure that the Requirements of this standard represent technical content, but since I pretty much agree with the requirements so I checked box 1.

19. If you are a member of the Ballot Pool (or if you represent a member of the Ballot Pool), will you vote on this standard based on its content (requirements, measures, compliance monitoring process and levels of non-compliance), or will you withhold your approval based on factors related to the standards process? This would include factors such as changes to the Functional Model, the removal of Financial Sanctions from the Compliance Enforcement Program, or the inclusion of Field Testing.

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- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote on this standard based solely on its content**
- I am a member of the Ballot Pool or I represent a member of the Ballot Pool and **I will vote against this standard until other standards-related issues are resolved.**
- Not applicable – I am not a member of the Ballot Pool nor do I represent a member of the Ballot Pool

I agree with the requirements of RAs as defined by this standard as long as my organization becomes an RA. If we cannot receive RA certification then I would not agree with the requirement because state regulatory issues do not allow my organization to transfer to someone else the RA responsibility defined here that we currently do..

20. Other Comments about this Standard:

See my comment to question 19. This is a major issue for us. Until I know who is and who isn't an RA, I will have trouble voting.