May 5, 2009

VIA ELECTRONIC FILING

Lorraine Légère, Board Secretary
New Brunswick Board of Commissioners of Public Utilities
P.O. Box 5001
15 Market Square, Suite 1400
Saint John, NB
E2L 4Y9

Re: *North American Electric Reliability Corporation*

Dear Ms. Légère:

The North American Electric Reliability Corporation ("NERC") hereby submits its North American Electric Reliability Corporation 2009-2011 Standards Development Plan Pursuant to Section 310 of the ERO Rules of Procedure.

Please contact the undersigned if you have any questions.

Respectfully submitted,

/s/ Rebecca J. Michael

Rebecca J. Michael

Attorney for North American Electric Reliability Corporation

BEFORE THE
MINISTRY OF ENERGY
OF THE PROVINCE OF NEW BRUNSWICK

NORTH AMERICAN ELECTRIC	**)**
RELIABILITY CORPORATION	**)**

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION 2009-2011 STANDARDS DEVELOPMENT PLAN PURSUANT TO SECTION 310 OF THE ERO RULES OF PROCEDURE

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May 5, 2009

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Volume I: Summary overview of the 2009 Development Plan and identification of significant modifications to the filed 2008 Development Plan.

Volume II: Details of the specific standards development projects.

Volume III: Summary of the expected regional entity standards development activity anticipated during the three-year period contemplated by the plan.

EXHIBIT B: Stakeholder comments

BEFORE THE
BRITISH COLUMBIA UTILITIES COMMISSION
OF THE PROVINCE OF BRITISH COLUMBIA

NORTH AMERICAN ELECTRIC)
RELIABILITY CORPORATION)

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION 2009-2011 STANDARDS DEVELOPMENT PLAN PURSUANT TO SECTION 310 OF THE ERO RULES OF PROCEDURE

I. INTRODUCTION

The North American Electric Reliability Corporation ("NERC") hereby submits its Reliability Standards Development Plan for the years 2009—2011 in accordance with Section 310 of the NERC Rules of Procedure, the *Reliability Standards Development Plan: 2009–2011* ("2009 Development Plan"), included as **Exhibit A**.

II. NOTICES AND COMMUNICATIONS

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

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III. BACKGROUND

In 2006, NERC developed an initial version of the Development Plan for standards development, *Reliability Standards Development Plan: 2007–2009* ("2007 Development Plan"). In 2007, NERC revised the 2007 Development Plan to create the 2008–2010 version of the plan, and continues with the 2009–2011 version of the plan contained herein. The Development Plan serves as a management tool to guide and coordinate the development of Reliability Standards and provide benchmarks for assessing progress. The Development Plan also serves as a communications tool for coordinating Reliability Standards development work with applicable governmental agencies in the United States and Canada, and for engaging stakeholders in Reliability Standards development. The plan further provides a base for developing annual Development Plans and budgets for the standards program. Consistent with the two previous versions of the plan, the referenced 2009–2011 work plan is filed on an informational basis without request for specific action.

The 2009 Development Plan builds upon the foundation established by the previous Development Plans and identifies the current plans for development and modification of NERC Reliability Standards. In particular, this version of the Development Plan identifies projects to address the Federal Energy Regulatory Commission's ("FERC") directives in Order No. 706[1] related to Cyber Security, FERC's Order from June 19 related to Violation Severity Levels,[2] and continues the work on NERC Reliability Standards embodied in Order No. 693[3] and subsequent FERC Orders.

The 2009 Development Plan, included as **Exhibit A**, is organized into three volumes:

[1] *Mandatory Reliability Standards for Critical Infrastructure Protection*, 122 FERC ¶ 61,040 (2008).
[2] *North American Electric Reliability Corporation*, "Order on Violation Severity Levels Proposed by the Electric Reliability Organization," 123 FERC ¶ 61,284 (2008).
[3] *Mandatory Reliability Standards for the Bulk-Power System*, 118 FERC ¶ 61,218, FERC Stats. & Regs. ¶ 31,242 (2007) ("Order No. 693"), *order on reh'g, Mandatory Reliability Standards for the Bulk-Power System*, 120 FERC ¶ 61,053 ("Order No. 693-A") (2007).

- Volume I provides a summary overview of the 2009 Development Plan and identifies significant modifications to the filed 2008 Development Plan.
- Volume II details the specific Reliability Standards development projects.
- Volume III summarizes the expected regional entity Reliability Standards development activity anticipated during the three year period contemplated by the plan.

The discussions that follow in this informational filing are intended to be informative of significant changes to content of the revised Development Plan as presented, to provide insight into changes in project timelines and completion dates that are reflected in the 2009 Development Plan, and to present a summary of stakeholder comments that were evaluated in the development of the revised 2009 Development Plan.

A. Significant 2009 Development Plan Revisions

i. General Revisions

This section provides a summary of significant revisions to the *Reliability Standards Development Plan: 2009–2011* relative to the 2008 Development Plan. The 2009 Development Plan includes 39 projects, an increase from the 36 identified in the 2008 plan. The net increase is attributed to the following:

Removed

- One project identified in the 2008 plan, Operate Within Interconnection Reliability Operating Limits, was completed and therefore removed from the 2009 Development Plan.

Added

- Two new unanticipated projects were initiated in 2008 and thus were added to the 2009 Development Plan:
    - Project 2008-05 — Credible Multiple Element Contingencies; and

- Project 2008-08 — EOP Violation Severity Levels Revisions.

- Two new projects anticipated to commence in 2009 and 2011, respectively, were added to this Development Plan:

  - Project 2009-02 — Real-time Tools
  - Project 2011-01 — Equipment Monitoring and Diagnostic Devices.

Realignment

In addition, two projects identified in the 2008 plan that were expected to commence in 2009 were initiated in 2008, earlier than anticipated and were given new project numbers:

- Project 2008-12 — Coordinate Interchange Standards replaces Project 2009-03 — Interchange Information identified in the 2008 Development Plan
- Project 2008-06 — Cyber Security Order No. 706 replaces Project 2009-07 — Cyber Security identified in the 2008 Development Plan.

Also, in response to industry comments concerning the ability to adequately review the many development projects underway or contemplated by the Development Plan and to allow for additional unanticipated projects that inevitably will be identified, the projects for years 2009 and beyond were realigned to help ensure that adequate NERC and industry stakeholder resources are available to support them. Accordingly, the 2009 Development Plan realigns one project from 2008 to 2009 and four projects from 2009 to 2010 relative to the 2008 Development Plan:

- Project 2008-03 — Emergency Operations was moved to 2009 as Project 2009-03 — Emergency Operations
- Project 2009-02 — Connecting New Facilities to the Grid was moved to 2010 as Project 2010-02 — Connecting New Facilities to the Grid
- Project 2009-04 — Modeling Data was moved to 2010 as Project 2010-03 — Modeling Data
- Project 2009-05 — Demand Data was moved to 2010 as Project 2010-04 — Demand Data
- Project 2009-06 — Protection Systems was moved to 2010 as Project 2010-05 — Protection Systems.

When developing this realignment of projects, NERC staff took into consideration that the number of projects proposed for any particular year is directly affected by the number of formal requests for interpretations submitted by industry. The number of requests for

interpretations of NERC Reliability Standards is projected to increase until clean-up of the Version 0 and some Version 1 standards is complete. As such, in addition to the Reliability Standards projects outlined in the plan, the Development Plan contemplates the commitment needed from NERC staff and industry resources to support the development of the response and balloting for requests for interpretations.

In addition to the project modifications discussed above, scope adjustments were made to specific projects to address the following:

- To comply with FERC's December 20, 2007 Order in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 regarding Load Serving Entities
- To clearly acknowledge the need for coordination with the North American Energy Standards Board ("NAESB").

These are discussed in subsequent sections.

ii. FERC's December 20, 2007 Order Regarding Load Serving Entities

On March 4, 2008, NERC submitted a compliance filing in response to a December 20, 2007 Order,[4] in which FERC reversed a NERC decision to register three retail power marketers as load serving entities ("LSEs"). In the Order, FERC directed NERC to submit a plan describing how it would address a possible "reliability gap" that NERC asserted would result if the LSEs were not registered.[5] NERC's compliance filing included a proposed long-term plan that requires NERC to determine the changes necessary to terms and requirements in Reliability Standards to address the issues surrounding accountability for loads served by retail marketers/suppliers and to process them through NERC's *Reliability Standards Development Procedure*.

By virtue of the 2009 Development Plan, NERC begins the implementation of its stated long-term plan to address the issues surrounding accountability for loads served by retail marketers/suppliers by incorporating specific direction for standard drafting teams for projects

[4] *Direct Energy Services, LLC, et al.*, "Order on Electric Reliability Organization Registry Determinations," 121 FERC ¶ 61,274 (2007).
[5] *Id*. at PP 49 and 50.

affected by the LSE issue. The following language was added to the projects in the Development Plan that include a requirement that is applicable to load serving entities:

> In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst ("RFC") footprint. The distinguishing feature of these three LSEs is that none own physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be followed. Each drafting team responsible for Reliability Standards that are applicable to LSEs is to review and change as necessary, requirements in the Reliability Standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see:
>
> - FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf)
> - NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf),
> - FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf)
> - NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filing to FERC on this subject.

iii. Coordination with the North American Energy Standards Board ("NAESB")

The NAESB Wholesale Electric Quadrant ("WEQ") Standards Review Subcommittee ("SRS") conducted an analysis of the NERC Reliability Standards Development Plan: 2008-2010 to identify those projects contained in the plan that may require complementary NAESB business practices. NAESB identified the following projects in its analysis:

- Project 2006-07 — Transfer Capabilities — (Available Transfer Capability ("ATC"), Total Transfer Capability ("TTC"), Capacity Benefit Margin ("CBM"), Transmission Reliability Margin ("TRM"))
- Project 2006-08 — Transmission Loading Relief
- Project 2007-05 — Balancing Authority Controls
- Project 2007-18 — Reliability Based Control
- Project 2008-01 — Voltage and Reactive Control
- Project 2008-03 — Emergency Operations (moved to Project 2009-03 — Emergency Operations in the 2009 Development Plan)
- Project 2009-02 — Connecting New Facilities to the Grid (moved to Project 2010-02 2010-02 — Connecting New Facilities to the Grid in the 2009 Development Plan)
- Project 2009-03 — Interchange Information (moved to Project 2008-12 — Coordinate Interchange Standards in the 2009 Development Plan).

A new section titled "Coordination with NAESB" was added to the project description for each of these projects to ensure that coordination with NAESB is considered by the standard drafting team assigned to the projects.

iv. Project Timeline Changes

This section identifies the changes to timelines for projects in the 2009 Development Plan relative to those in the 2008 Development Plan and the factors contributing to the changes.

NERC uses the Reliability Standards Development Plan as a mechanism to report progress relative to the target project completion dates provided in the plan. To develop consensus during the development of Reliability Standards, the standard drafting teams, working with industry stakeholders, must thoroughly vet the many issues outlined in the scope of the projects contained in Volume II of the Development Plan. Accordingly, the plan incorporates a reasonable estimate for completion of each project, but the plan also recognizes that flexibility is required in developing a timeline to account for the time needed to complete the stakeholder consideration of the issues. Informed by the detailed engagement of standard drafting teams assigned to complete the projects, project timelines in the 2009 Development Plan have been updated to reflect reasonable deliverable dates based on the best estimate of the teams.

Several factors have generally contributed to the differences in project timelines for specific projects in the 2009 Development Plan relative to the 2008 Development Plan. These factors include: the number of comment periods needed for each project was more than expected, much broader participation by industry stakeholders in the comment periods that resulted in additional industry comment periods and lengthier reply comment development; stricter internal review by NERC staff of documents proposed by drafting teams for posting for industry comment resulting in additional development time for the drafting teams; unanticipated higher priority projects supplanted projects expected to begin in years 2007 and 2008; acknowledgment

that it took NERC longer to reach a full complement of standards development coordinators causing some projects to be initiated later than anticipated; and the unanticipated additional time needed by the standard drafting teams to consider and incorporate the directives contained in FERC's Orders.

The following paragraphs summarize the specific timeline changes for the projects in the 2009 Development Plan as compared to the timelines identified in the 2008 Development Plan, and, if a significant change is identified, the factors contributing to the change.

Pre-2006 Operate Within Interconnection Reliability Operating Limits. This project was completed in 2008 and has been removed from the 2009 Development Plan.

2006-01 System Personnel Training. The draft Reliability Standard was posted for a total of four comment periods instead of the two comment periods envisioned in the original project timeline. The additional two comment periods have resulted in an approximate six-month project extension from that contemplated by the 2008 Development Plan. The proposed Reliability Standard was approved by the registered ballot body in December, 2008 and will be presented for NERC Board adoption in February, 2009.

2006-02 Assess Transmission Future Needs. The first draft of the revised TPL-001-1 — Transmission System Planning Performance Requirements standard was posted for industry comment in the fourth quarter of 2007, and the second draft was posted for industry comment in the third quarter of 2008. The effort to complete the first and second drafts of the proposed Reliability Standard took longer than expected due to the significant volume of industry comments received during the postings and the added time for internal NERC staff review of the draft standard. The anticipated completion date of the project is now slated for the fourth quarter of 2009.

2006-03 System Restoration and Blackstart. The first posting of the draft Reliability Standards took place in the third quarter of 2007. Three additional postings of the draft

Reliability Standards were conducted in 2008. Thus, the draft Reliability Standards were posted for a total of four comment periods instead of the two comment periods envisioned in the original project timeline. The additional two comment periods have resulted in an approximate six-month project extension. The anticipated completion date of the project is now the first quarter of 2009.

2006-04 Backup Facilities. The first and second drafts of the Reliability Standard were posted for industry comment in 2008, and the standard drafting team anticipates a third comment period before the standard is balloted. The additional comment period and added time to address issues identified during the initial comment periods have resulted in an approximate six month project extension. The anticipated completion date of the project is the second quarter of 2009.

2006-06 Reliability Coordination. The first draft of these Reliability Standards was posted for industry comment in the third quarter of 2008. This project began two months later than originally anticipated, because NERC did not have the staff to begin sooner , and the drafting of the revised Reliability Standards required more work and coordination with other projects than originally anticipated. This activity results in an approximate seven-month extension to the project. The anticipated completion date of the project is now the second quarter of 2009.

2006-07 Transfer Capabilities: ATC, TTC, CBM and TRM.

NERC recently completed the filing of these proposed Reliability Standards , except for the submission of Violation Risk Factors ("VRFs"). These will be provided in the first quarter of 2009.

2006-08 Transmission Loading Relief. The first phase of this project that split the reliability aspects from the commercial aspects of the then-existing standard took four months longer to complete than anticipated, delaying the start of subsequent phases. Additionally, the field test associated with Phase 2 modifications was extended, and an additional comment period

was needed to develop the Phase 3 changes that are being addressed concurrent with Phase 2. The resultant adjustment in project schedule added nine months for Phase 2 and six months for Phase 3. The anticipated completion date for Phase 2 of the project is now the third quarter of 2009 and the anticipated completion date for Phase 3 is the second quarter of 2009.

2006-09 Facility Ratings. The project concluded in late 2008 with a failed ballot. Pursuant to the *Reliability Standards Development Procedure* currently in effect, a new SAR is required to re-initiate the project. A new SAR and proposed standard was submitted in January, 2009. accepted by the Standards Committee, and posted for industry review.

2007-01 Underfrequency Load Shedding. The standard drafting team posted the revised Reliability Standard for the first industry comment period in the third quarter of 2008. The development of the foundational underfrequency performance characteristics required many more meetings than originally anticipated in order to thoroughly vet and discuss these and other issues. This effort resulted is an approximate six-month extension to the project. The anticipated completion date of the project is the third quarter of 2009.

2007-02 Operating Personnel Communications Protocols. This project began two months later than anticipated, and the standard drafting team required many more meetings than originally anticipated in order to thoroughly vet and discuss a number of issues including the number of existing standards to be considered in the scope and the incorporation of alert level guidelines. Additional time also was incurred for internal NERC review of the draft Reliability Standard. The result is an approximate five-month extension to the project. The anticipated completion date of the project is the first quarter of 2009.

2007-03 Real-time Transmission Operations and Balancing of Load and Generation. This project began three months later than anticipated, and the drafting team has added an additional comment period to the original schedule resulting in a six-month extension to the project. The standard drafting team posted the revised Reliability Standards for the first industry

comment period in the fourth quarter of 2008. The anticipated completion date of the project is the third quarter of 2009.

2007-04 Certifying System Operators. The initiation of this project was delayed by eight months due to the assignment of NERC staff resources to other high priority projects. This resulted in modifications to the project timeline such that the anticipated completion date of the project is the third quarter of 2009.

2007-05 Balancing Authority Controls. This project began seven months later than originally anticipated, and the project timeline needed to be adjusted to accommodate the coordination necessary with the NAESB effort pertaining to the commercial elements relating to the BAL Reliability Standards included in the scope of the project. The standard drafting team also created and issued an industry survey on Time Error Correction in order to collect data from the industry that was not contemplated in the original timeline for the project. The anticipated completion date of the project is the fourth quarter of 2010.

2007-06 System Protection. This project is on target to finish in the third quarter of 2010 as originally scheduled.

2007-07 Vegetation Management. The standard drafting team posted the revised Reliability Standard for the first industry comment period in the fourth quarter of 2008, much later than originally anticipated due to the debate over the sanctions implications of non-compliance, the concerns raised regarding the purpose, technical requirements and enforceability of the requirements, and the several iterations of NERC staff internal review of the draft standard. As a result of the significant volume of comments received during the November, 2008 posting and the obligation to respond to each comment, the team now expects a subsequent industry comment period that will extend the project to the fourth quarter of 2009. This target is beyond the anticipated completion date stated in the development plan as the impact of the comment period was not known at the time the plan was approved by the NERC Board.

2007-09 Generator Verification. The drafting effort for the project lasted much longer than originally planned in order in order to thoroughly vet and discuss a number of issues associated with the project. Transition between NERC staff coordinators for this project also affected the project timeline. As a result, there was an approximate ten-month extension of the project. The anticipated completion date of the project is the third quarter of 2009.

2007-11 Disturbance Monitoring. The standard drafting team required more meetings then originally anticipated in order to thoroughly vet and discuss the issues associated with the standard. The result is an approximate three-month extension to the project. The anticipated completion date of the project is the second quarter of 2009.

2007-12 Frequency Response. This project began four months later than anticipated. The anticipated completion date of the project is the second quarter 2010.

2007-14 Permanent Changes to Timing Table in Coordinate Interchange Standards. This project was completed on schedule and approved by the NERC Board in October, 2008.

2007-17 Protection System Maintenance and Testing. The standard drafting team required more meetings then originally anticipated in order to thoroughly vet and discuss the issues associated with the standard before the first posting of the draft standard for industry comment. The result was an approximate four-month extension to the project. The anticipated completion date of the project is the third quarter of 2009.

2007-18 Reliability-based Control. This project began three months later than anticipated. The standard drafting team posted the revised standards for the first industry comment period in the fourth quarter of 2008. The result was an approximate four-month extension to the project. The anticipated completion date of the project is now the third quarter of 2010.

2007-23 Replace Levels of Non-Compliance with Violation Severity Levels. This project was completed on schedule in the first quarter of 2008 and was subsequently re-opened

in the third quarter of 2008 in response to FERC's June 19, 2008 Order on Violation Severity Levels. The anticipated completion date of the re-opened project is now September, 2009, to be responsive to FERC's Order to provide the Violation Severity Levels and associated reports.

2008-01 Voltage and Reactive Control. No changes have been made to the project timeline.

2008-02 Undervoltage Load Shedding. No changes have been made to the project timeline.

2008-03 Emergency Operations. No changes have been made to the project timeline.

2008-04 Facility Ratings. This project was initiated in 2008 to address directives in FERC's Order No. 705[6] and was added to the 2009 Development Plan. It was completed according to schedule in 2008. Because it was initiated and completed in 2008, it does not appear in the 2009 Development Plan.

Project 2008-05 - Credible Multiple Element Contingencies. This project was initiated in 2008 to address issues associated with credible multiple contingencies in the operating horizon and was added to the 2009 Development Plan. Because the project has just been initiated and is still in the SAR phase, the standard drafting team has not yet developed a schedule for the project.

2008-06 Cyber Security Order 706. This project was advanced to begin in 2008 to address directives in FERC's Order No. 706 and was added to the 2009 Development Plan. The standard drafting team is anticipating completing Phase I of the project in the first half of 2009, with the majority of substantive issues in Phase II anticipated for completion in the fourth quarter of 2010.

2008-08 Emergency Preparedness and Operations Violation Severity Levels. This project was initiated in 2008 and was added to the 2009 Development Plan. This project is being

[6] *Facilities Design, Connections and Maintenance Reliability Standards*, "Order No. 705 – Final Rule," 121 FERC ¶ 61,296 (2007).

coordinated with Project 2007-23 Violation Severity Levels. The anticipated completion date this project is now slated for September, 2009 to be responsive to FERC's Order.

Project 2008-12 Coordinate Interchange Standards. This project was initiated in 2008 and was added to the 2009 Development Plan to ensure that each requirement is assigned to an owner, operator or user of the bulk power system, and not to an interchange tool. Because the project has just been initiated, the standard drafting team has not yet developed a schedule for the project.

The timelines for the projects planned for future years (*e.g.*, projects commencing in 2009 and later) have been removed from the 2009 Development Plan so that a more accurate schedule for these particular projects can be developed in coordination with the assigned standard drafting teams before they are publicly noticed.

B. NERC Stakeholders Input

To support the preparation of the 2009 Development Plan, NERC submitted the 2009-2011 Development Plan to its stakeholders for two public comment periods, which took place from July 1-16, 2008, and again through September 5, 2008, following an August 28, 2008 industry Webex. In addition, NERC solicited input from the NERC Operating Committee, Planning Committee, and Critical Infrastructure Protection Committee as well as additional subject matter experts on NERC staff. NERC received 18 sets of comments during the open stakeholder comment periods from Bonneville Power Administration, Dominion Resource Services, Dominion Virginia Power, Electric Power Supply Association, Gainesville Regional Utilities, Midwest ISO, National Rural Electric Cooperative Association, NERC Real-time Tools Best Practices Task Force, NERC staff subject matter experts, North American Energy Standards Board, Northeast Power Coordinating Council Regional Standards Committee, NRG Energy, PJM Interconnection, Southern California Edison and Southern Company Transmission. The

comments and NERC's response to these comments are provided in Appendix A to Volume I of the 2009 Development Plan and are summarized as follows:

Comment	Response
The timelines identified in the 2009 Development Plan, like the plan itself, are dynamic (non-static/ever changing) and should be used as targets and that timelines may need to be modified as drafting teams obtain more details on the scope of the projects.	NERC agrees.
Project 2007-07 Vegetation Management (FAC-003) and Project 2009-07 Cyber Security (CIP-002 to CIP-009) identified in the 2008 Development Plan should be "fast-tracked."	NERC concurs with the importance of these two projects. In the revised Development Plan for 2009, Project 2007-07 Vegetation Management is a current active project with a target completion in 2009. Furthermore, Project 2008-06 Cyber Security Order No. 706 was initiated in 2008, ahead of the anticipated project slated for 2009.
The Development Plan should consider a review of the need for a standard on Interconnection Operations Services and associated definitions related to ancillary services addressed in the *Pro Forma* Open Access Transmission Tariff.	NERC does not believe these "products" are in themselves performance criteria that should be embodied in NERC Reliability Standards. NERC will coordinate with the North American Energy Standards Board to the extent practical in the development of definition of Interconnection Operations Services and Ancillary Services terms.
Project 2009-01 Disturbance and Sabotage Reporting (CIP-001 and EOP-004) and Project 2009-07 Cyber Security (CIP-002 to CIP-009) identified in the 2008 Development Plan should be initiated sooner rather than later.	NERC concurs with the suggestion on the importance of these two projects. In the revised Development Plan for 2009, Project 2009-01 Disturbance and Sabotage Reporting is scheduled to commence in early 2009 and what was identified as Project 2009-07 Cyber Security is already underway under the title of Project 2008-06 Cyber Security Order No. 706.
Develop a timeline for regions to develop 'fill-in-the blank' standards. Currently some regions are doing nothing while others have gone beyond the original four regional standards proposed in the 2007 iteration of the Development Plan as possibly requiring regional standard coordination.	NERC standards staff is in regular contact with the Regional Entities responsible for developing regional Reliability Standards. Coordination of the four standards referenced above is ongoing. The timelines for the "fill-in-the-blank" standards have been embodied in the scopes of the individual projects in the Development Plan associated with these standards.
Development Plan should include the recommendations for new or improved Reliability Standards documented in the final report of the Real-time Tools Best Practices Task Force ("RTBPTF").	NERC concurs and added a new project (Project 2009-02 Real-time Tools) to the 2009 Development Plan.
Standards covering the application of major equipment monitoring and diagnostic devices and procedures should be developed.	NERC concurs and added a new project (2011-01 Equipment Monitoring and Diagnostic Devices) to consider this activity.

Requirements pertaining to the Interchange Distribution Calculator need to be developed to address flaws in the current process that threaten reliability. Initially, the Interchange Distribution Calculator ("IDC") needs to be modified to take into account real time topology. Due to the lack of any requirement to update input information, the IDC uses static information that does not reflect real time operations resulting in incorrect IDC calculations to determine flowgate relief. Also, the IDC does not properly capture and reflect internal balancing authority schedules. These impacts on the flowgate are not considered by the IDC even though they could have a significant impact on the constraint. The resultant impact is that entities engaging in interchange transactions bear a disproportionate share of the system's reliability obligations. NRG Energy noted that NERC has already received a Standards Authorization Request ("SAR") related to these same concerns. The SAR was jointly submitted by the Midwest ISO, PJM, and SPP, and is titled "Parallel Flow Visualization/Mitigation for Reliability Coordinators in the Eastern Interconnection."	These comments will be submitted as part of the standards development process associated with the SAR once it is posted for industry comment.
Concern with the scope and number of projects contained in the Reliability Standards Development Plan: 2008-2010. The plan presents an impressive undertaking that will tax not only NERC's resources, but that of the rest of the industry as well. The Development Plan does not recognize the reality of limited staff and stakeholder resources to complete the projects as outlined in the current version of the plan. PJM recommends that NERC reevaluate its plan and develop a smaller list of priority projects that will yield the greatest impact to the reliability of the bulk electric system.	The NERC Standards Committee manages the NERC standards development process to achieve broad bulk power system reliability goals for the industry. The Standards Committee protects the integrity and credibility of the standards development process with the support of NERC staff facilitation and coordination. The Standards Committee takes into consideration the potential impact on industry resources when planning standards related projects and activities.
The development of Violation Risk Factors needs to be done in a uniform manner across all standards.	NERC agrees that consistency across all NERC standards is important and this reflects one of the Commission's intent when it issued its guidelines for Violation Risk Factor assignments in May, 2007.
The development of NERC Reliability Standards should be closely monitored to	NERC has staffed its Manager of Business Practice Coordination position to, among other

ensure that all requirements related to business practices are developed under NAESB Standards rather than being included in the NERC Standards.	things, ensure that coordination with NAESB takes place in the development of standards. NAESB offered comments that were incorporated in the 2009 Development Plan.
It is time to "resist implementing and developing new standards" until the industry catches up with all the changes that have taken place in recent years.	NERC appreciates the volume of standards development activity underway but relies on the NERC Standards Committee, whose membership consists of industry representatives, to consider the potential impact on industry resources when planning standards related projects and activities.
It is of vital importance that the drafting teams develop, and adhere, to the extent possible, to the milestone schedules and associated deliverable dates.	NERC continues to work to improve the accuracy of project schedules but many variables contribute to the difficulty in developing and meeting accurate project schedules. NERC's goal is to develop quality standards that maintain an adequate level of reliability, not to meet a particular schedule unless there is a specific need to meet a specific deadline.
Stress the importance of completing the "Roles and Responsibilities: Standards Drafting Team Activities" guideline.	NERC is committed to finalize the guideline document NRECA references and is working to obtain policy input from the NERC Board that will provide the final elements for the guideline.
The Development Plan should provide more guidance as to who can be held accountable for NERC standards.	The drafting teams assigning applicability for each proposed requirement should follow the definitions provided in the NERC Glossary of Terms Used in Reliability Standards as guided by the Functional Model.
The status of the Joint Interface Committee ("JIC") between NERC, NAESB, and ISO-RTO Council be discussed as NERC no longer lists the JIC as a committee on their Website.	The JIC has been dissolved as the ISO/RTO Council is explicitly recognized by both NERC and NAESB and is able to participate on its own accord within both organizations.
Vet, clarify, and simplify definitions of Violation Risk Factors and Violation Severity Levels	NERC's Standards Committee is currently addressing the issue raised regarding Violation Risk Factors. Through the Violation Severity Level drafting team, NERC is continuing to develop Violation Severity Levels in order to respond to the Commission's September, 2009 deadline directed in its Order on Violation Severity Levels and its Order on Rehearing and Clarification.
Develop a standards database.	NERC is currently developing this database to support the compliance administration function initially, and thereafter will focus on the development of the user interface that will permit user-guided content.
Resolve incorrect functional model	Each project in the Development Plan includes

assignments in Version 0 Reliability Standards.	the review of applicability as part of its scope and will therefore address this issue.
Implement a plan to simplify and clarify the standards.	NERC believes the Development Plan that is the subject of this filing fulfills this purpose by including within each project's scope the expectation to make the standard clearer, but this effort will require the support of industry stakeholders in the implementation of the Development Plan.
The following projects that may require coordinated NAESB business practices: • Project 2006-07 — Transfer Capabilities — (ATC, TTC, CBM and TRM) • Project 2006-08 — Transmission Loading Relief • Project 2007-05 — Balancing Authority Controls • Project 2007-18 — Reliability Based Control • Project 2008-01 — Voltage and Reactive Control • Project 2008-03 — Emergency Operations (moved to Project 2009-03 in this plan) • Project 2009-02 — Connecting New Facilities to the Grid (moved to Project 2010-02 in this plan) • Project 2009-03 — Interchange Information (moved to Project 2008-12 in this plan)	NERC includes a new section entitled "Coordination with NAESB" to the project descriptions in Volume II of the 2009 Development Plan for each listed project. This approach will ensure the information related to the coordination with NAESB is available for the drafting team to consider in the development of the associated standard(s).
Quantify and keep track of the standards effort as follows: 1) originally forecasted projects, 2) new industry-requested standards and projects, and 3) regulatory directed initiatives and re-work of filed standards. This is important information to better forecast required resources for future Development Plans and the budgets to support them.	NERC will work with the Standards Committee to consider the merits of the suggestion.
Include a review of the applicability of the Transmission Owner ("TO") and Transmission Operator ("TOP") standards to Generators, where particular generators have a radial line that extends from their plant to a bulk electric system substation and have been asked by their respective Regional Entity to register their radial transmission for the TO/TOP function.	NERC collected industry input through a survey process conducted in the Fall, 2008 and will develop a course of action to fully address the issue in early 2009.

Respectfully submitted,

/s/ Rebecca J. Michael

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EXHIBIT A

Reliability Standards Development Plan: 2009–2011 ("2009 Development Plan")

Volume I:	Summary overview of the 2009 Development Plan and identifies significant modifications to the filed 2008 Development Plan.
Volume II:	Details the specific standards development projects.
Volume III:	Summarizes the expected regional entity standards development activity anticipated during the three-year period contemplated by the plan.

NERC

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Reliability Standards Development Plan: 2009–2011

Volume I
Overview
September 22, 2008

to ensure the reliability of the bulk power system

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Acknowledgement

The NERC Reliability Standards Program would like to thank all the individuals who invest their time and expertise in the development of NERC Reliability Standards and in the annual revision of this *Reliability Standards Development Plan*. The plan reflects comments and input from stakeholders, staff, the NERC technical community, and government agencies with oversight for electric reliability. Through collaboration and industry consensus, we expect to develop NERC Reliability Standards that are technically accurate, clear, enforceable, and provide an adequate level of reliability for the North American bulk power system. We know the results will support our overall goal of ensuring bulk power system reliability.

Table of Contents

Volume I: Overview

Volume II (provided separately): Project Descriptions

Volume III (provided separately): Regional Reliability Standards Projects

Introduction

Purpose

The *Reliability Standards Development Plan: 2009-2011* is the third version of the plan and serves to make current the 2008-2010 plan that was published in October 2007. This standards development plan is a management tool to guide, prioritize, and coordinate the development of reliability standards. The plan serves as a communications tool for coordinating standards development work with applicable governmental agencies in the United States and Canada, and for engaging stakeholders in standards development.

Summary of Modifications

This revised plan for 2009-2011 defines a total of four new standards development projects that were not included in the previous plans: two new projects for 2008, and one each for years 2009 and 2011. In addition, two projects that were originally planned to start in 2009 were initiated in 2008 due to a change in priority. Also, in response to industry comments concerning the ability to adequately review the many development projects underway or contemplated by the plan and to allow for additional unanticipated projects that inevitably will be identified, the projects for years 2009 and beyond were realigned to help ensure that adequate resources are available to support them. In addition, modifications were made to individual projects to:

- comply with FERC's December 20, 2007 Order in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 regarding Load Serving Entities; and
- clearly identify the need for coordination with the North American Energy Standards Board (NAESB).

Projects within this Plan:

The total number of projects proposed in this plan increased to 39 from the 36 listed in the 2008-2010 version of the plan for the following reasons:

- One project identified in the 2008-2010 plan has been completed and has been removed from this plan:
  - A project initiated prior to 2005 — Operate Within Interconnection Reliability Operating Limits
- Two new projects initiated in 2008 but not identified in the 2008-2010 plan were added to this plan:
  - 2008-05 — Credible Multiple Element Contingencies
  - 2008-08 — EOP Violation Severity Levels Revisions
- Two new projects anticipated to commence in future years were added to this plan:
  - 2009-02 — Real-time Tools
  - 2011-01 — Equipment Monitoring and Diagnostic Devices

In addition, two projects identified in the 2008-2010 plan that were scheduled to commence in 2009 were revised and initiated earlier than anticipated:

  - 2008-12 — Coordinate Interchange Standards replaces Project 2009-03 — Interchange Information from the 2008-2010 plan
  - 2008-06 — Cyber Security Order 706 replaces Project 2009-07 — Cyber Security from the 2008-2010 plan

Realignment of Projects between Years

As part of the process employed in 2008 for revising the *Reliability Standards Development Plan*, NERC staff reached out to all stakeholders and asked for input on the plan. Similar to last year, several stakeholders indicated a concern that too many projects were under development concurrently and recommended that the work plan focus industry resources on the projects having the greatest impact on reliability in the near-term, while deferring those of less immediate reliability benefit.

Accordingly, this version of the plan realigns one project from 2008 to 2009 and four projects from 2009 to 2010:

- Project 2008-03 — Emergency Operations was moved to 2009 as Project 2009-03 — Emergency Operations
- Project 2009-02 — Connecting New Facilities to the Grid was moved to 2010 as Project 2010-02 — Connecting New Facilities to the Grid
- Project 2009-04 — Modeling Data was moved to 2010 as Project 2010-03 — Modeling Data
- Project 2009-05 — Demand Data was moved to 2010 as Project 2010-04 — Demand Data
- Project 2009-06 — Protection Systems was moved to 2010 as Project 2010-05 — Protection Systems

When developing this realignment of projects, NERC staff took into consideration that the number of projects proposed for any particular year is directly impacted by the number of formal requests for interpretations submitted by industry. The number of requests for interpretations of NERC Reliability Standards is projected to increase until the cleanup of the Version 0 and some Version 1 standards is completed. As such, in addition to the standards projects outlined in the plan, the development plan contemplates the commitment needed from NERC staff and industry resources to support the development of the response and balloting for requests for interpretations. In 2007, NERC responded to seven formal requests for interpretations. In 2008, NERC anticipates to receive nine formal requests for interpretation, six of which have already been received as of this writing.

FERC's December 20, 2007 Order in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 Regarding Load Serving Entities:

On March 4, 2008, NERC submitted a compliance filing in response to a December 20, 2007 Order, in which the Commission reversed a NERC decision to register three retail power marketers to comply with Reliability Standards applicable to load serving entities (LSEs) and directed NERC to submit a plan describing how it would address a possible "reliability gap" that NERC asserted would result if the LSEs were not registered. NERC's compliance filing included the following proposal for a short-term plan and a long-term plan to address the potential gap:

- Short-term: Using a posting and open comment process, NERC will revise the registration criteria to define "Non-Asset Owning LSEs" as a subset of Load Serving Entities and will specify the reliability standards applicable to that subset.
- Longer-term: NERC will determine the changes necessary to terms and requirements in reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers and process them through execution of the three-year *Reliability Standards Development Plan*.

In this revised *Reliability Standards Development Plan*, NERC is commencing the implementation of its stated long-term plan to address the issues surrounding accountability for loads served by retail marketers/suppliers. The NERC *Reliability Standards Development Procedure* will be used to identify the changes necessary to terms and requirements in reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers.

Specifically, the following description has been incorporated into the scope for affected projects in this revised *Reliability Standards Development Plan* that includes a standard applicable to Load Serving Entities:

> **Source:** FERC's December 20, 2007 Order in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000
>
> **Issue:** In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none own physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be followed. Each drafting team responsible for reliability standards that are applicable to LSEs is to review and change, as necessary, requirements in the reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see:
>
> - FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf)
> - NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf),
> - FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf), and
> - NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Coordination with the North American Energy Standards Board (NAESB):

The NAESB Wholesale Electric Quadrant (WEQ) Standards Review Subcommittee (SRS) conducted an analysis of the NERC *Reliability Standards Development Plan: 2008-2010* to identify those projects contained in the plan that may require complementary NAESB business practices. NAESB identified the following projects that may require coordinated NAESB business practices:

- Project 2006-07 — Transfer Capabilities — (ATC, TTC, CBM, TRM)
- Project 2006-08 — Transmission Loading Relief
- Project 2007-05 — Balancing Authority Controls
- Project 2007-18 — Reliability Based Control
- Project 2008-01 — Voltage and Reactive Control
- Project 2008-03 — Emergency Operations (moved to Project 2009-03 in this plan)
- Project 2009-02 — Connecting New Facilities to the Grid (moved to Project 2010-02 in this plan)
- Project 2009-03 — Interchange Information (moved to Project 20008-12 in this plan)

A new section titled "Coordination with NAESB" was added to the project description in Volume II of this plan for each of the projects identified immediately above and includes information related to the coordination with NAESB for the drafting team to consider in the development of the associated standard(s).

Other modifications:

As part of the process employed in 2008 for revising the *Reliability Standards Development Plan*, NERC staff reached out to the stakeholder community asking for input on how to improve the plan. In so doing, NERC received a number of comments that led to various modifications and improvements to the plan. Appendix A to this Volume I summarizes the comments received and NERC's response to the comments.

NERC staff contemplated the addition of a specific project to address the clean-up of V0 requirements for 22 standards[1] that have not yet been initiated in another existing work plan project. However, the staff chose not to create a separate project for this activity as there are projects with potentially higher reliability impacts for which the limited industry and staff resources should be dedicated. The V0 clean-up of these 22 standards will be undertaken when projects associated with these standards are initiated as outlined in the development plan.

Organization of Work Plan

The *Reliability Standards Development Plan: 2009–2011* is organized into three volumes.

Volume I provides an overview of the plan, including the history of the current status of standards development activities related to the development and approval of standards and includes:

- Introduction explaining the purpose of the plan and background
- Plan description
- Issues to be addressed in improving standards

Volume II details the specific standards development projects and includes:

- Summary Reliability Standards Development Plan Schedule
- Project descriptions

Volume III summarizes the regional reliability standards development activity anticipated over the three year period covered by the plan.

Goal

The goal of the *Reliability Standards Development Plan: 2009–2011* is to continue the development of NERC Reliability Standards to ensure that the set of NERC Reliability Standards in its entirety provides an adequate level of reliability for the North American bulk power system, and is enforceable upon all bulk power system users, owners, and operators in accordance with applicable statutes and regulations in the United States and Canada.

[1] FAC-001, FAC-002, MOD-010, MOD-011, MOD-012, MOD-013, MOD-014, MOD-015, MOD-016, MOD-017, MOD-018, MOD-019, MOD-020, MOD-021, PRC-003, PRC-004, PRC-012, PRC-013, PRC-014, PRC-015, PRC-016, PRC-020, PRC-021

Objectives as Part of the Goal

To meet this goal, NERC has several specific objectives that include:

- Addressing remaining blackout recommendations requiring new or revised standards.
- Addressing comments from industry, FERC, and others suggesting improvements to each standard, including those received from industry stakeholders during a public comment period.
- Addressing quality issues to ensure each standard has a clear statement of purpose, and has outcome-focused requirements that are clear and measurable.
- Ensuring measures and compliance elements are aligned to support the requirements within the standard and follow definitions outlined in the standards template.
- Reorganizing the standards more logically based on topic and removing redundancies.
- Addressing other pending proposals for new standards.
- Improving standard requirements by incorporating approved interpretations.
- Identifying less well-defined issues ("variables") that could lead to standard development activities in the work plan timeframe.
- Satisfying the requirement for a five-year review of all standards.

Considerations for Meeting Objectives

Developing excellent reliability standards is a long-term effort. This plan best supports the effort in that it is flexible and can be continuously adapted to circumstances and changing priorities, as demonstrated in this revised plan. This plan will be reviewed and maintained by the NERC Standards Committee and NERC standards program staff, and will be updated on an annual basis, or more frequently if needed.

Background

Authority

Through the enactment of the Energy Policy Act of 2005, Congress created Section 215 of the Federal Power Act (FPA). Section 215 assigns to the Commission the responsibility and authority for overseeing the reliability of the bulk power systems in the United States, including the setting and enforcing of mandatory reliability standards. In February 2006, the Commission issued Order No. 672 establishing its requirements for certifying an industry, self-regulating ERO, as envisioned in the legislation. On the basis of that order, NERC filed its application to become the ERO in the United States on April 4, 2006. NERC concurrently filed for similar recognition with the federal and provincial governments in Canada.

On July 20, 2006, the Commission issued its *Order Certifying the North American Electric Reliability Corporation as the Electric Reliability Organization and Ordering Compliance Filing*, finding that NERC met the requirements of Order No. 672. Since then, NERC has provided the requisite compliance filings and the Commission has issued several orders as a result to address the remaining issues with NERC's application and certification. NERC's filings with FERC[2] and the Commission's orders[3] can be found on the NERC Web site.[4]

[2] NERC filings to FERC, http://www.nerc.com/page.php?cid=1|8|170
[3] Commission orders, http://www.nerc.com/page.php?cid=1|8|170

On September 15, 2006, the National Energy Board of Canada announced a Memorandum of Understanding (MOU) recognizing NERC as the ERO in Canada. NERC also signed MOUs with Ontario, Quebec, and Nova Scotia in 2006. An interim MOU has been signed with Manitoba pending possible changes in its legislative regime for reliability. MOUs have been drafted and are expected to be concluded shortly with New Brunswick and Saskatchewan. NERC is working with the remaining Canadian provinces to accomplish the same understanding.

Standards Filings and Approvals

NERC has filed with the regulatory authorities in the U.S. and Canada petitions to approve numerous reliability standards that were proposed as new, modified, or retired reliability standards, as well as several interpretations; in the U.S., the Commission has taken action on a majority of these standards and interpretations. NERC has filed petitions for approval of 120 standards as mandatory and enforceable in the United States. The following summarizes the status of reliability standards filings in the U.S.:

- In March, 2007, the Commission issued Order No. 693, *Mandatory Reliability Standards for the Bulk Power System*. In this final rule, the Commission approved 83 reliability standards and directed improvements to 56 of these standards. The work plan addresses these improvements as well as the 24 standards that the Commission neither approved nor remanded, which are referred to as the "fill-in-the-blank" regional standards.
- In December 2007, the Commission issued its final rule in Order No. 705 approving Facilities Design, Connections, and Maintenance (FAC-010-1, FAC-011-1, and FAC-014-1) reliability standards.
- In January 2008, the Commission issued Order No. 706 that approved cyber security standards, CIP-002-1 through CIP-009-1.
- In July 2008, the Commission approved modifications to five reliability standards (INT-001, INT-004, INT-005-2, INT-006-2, and INT-008-2) from the Interchange family of NERC standards.
- NERC filed the following proposed reliability standards for regulatory authority approval but has yet to receive disposition of the requests for approval: PRC-023-1 — Transmission Relay Loadability; IRO-006-4 — Transmission Loading Relief; NUC-001-1 — Nuclear Plant Interface Coordination; MOD-001-1 — Available Transmission System Capability; MOD-008-1 — Transmission Reliability Margin Calculation Methodology; MOD-028-1 — Area Interchange Methodology; MOD-029-1 — Rated System Path Methodology; and MOD-030-1 — Flowgate Methodology.

At the regional level, the Commission also approved eight regional standards submitted by the Western Electricity Coordinating Council and approved by NERC for filing with the Commission and the Canadian regulatory authorities.

Detail on these and all filings and orders are found as links on the home page of NERC's Web site.

[4] NERC Web site, http://www.nerc.com/

Standards Development Process

NERC uses a process for refining, developing, and approving reliability standards that has received national, formal accreditation and approval by federal regulators. A key element of the work plan is to review and upgrade all the existing standards based on the directives in the Commission's final rule, previous industry comments, and actual experience gathered from using the standards. Additionally, NERC's rules and a condition of accreditation by the American National Standards Institute (ANSI)[5] require that each standard be reviewed at least every five years. NERC received ANSI accreditation on March 24, 2003. NERC anticipates completing its review and upgrade of standards identified in this work plan over several years in support of these accreditation requirements.

The *Reliability Standards Development Procedure*[6] provides a systematic approach to improve the standards and to document the basis for those improvements, and it will serve as the mechanism for achieving the improvements detailed in this plan. The standards development process includes active involvement of industry experts and stakeholders tasked with developing excellent standards.

In its April 2006 application to be certified as the ERO, NERC proposed to develop reliability standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure[7] and the *Reliability Standards Development Procedure*[8], which was incorporated into the Rules of Procedure as Appendix A. In its June 2006 ERO Certification Order, the Commission found that NERC's proposed rules provide for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing reliability standards. The Commission noted that NERC's procedure calls for notifying and involving the public in developing a reliability standard. The development process is open to any person or entity with a legitimate interest in the reliability of the bulk power system. NERC considers the comments of all stakeholders, and a vote of stakeholders is required to approve a reliability standard before it is submitted for regulatory approval.

Furthermore, NERC also coordinates its reliability standards development activities with the business practices developed by the North American Energy Standards Board[9] (NAESB).

Background on Standards Development

The initial stage in the establishment of mandatory reliability standards began with the translation of the historical operating policies, planning standards, and compliance templates into a baseline set of working standards, referred to as Version 0 reliability standards.

This iteration of the work plan continues to focus attention on improving the baseline set of Version 0 reliability standards. Since the inaugural installation of the work plan was published, the Commission approved 94 reliability standards as mandatory and enforceable in the United States, although it directed modifications to 56 of those standards. The Commission held an additional 24 reliability standards as pending and NERC has proposed six additional standards for approval.

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[5] ANSI accreditation, http://www.nerc.com/filez/ansi.html
[6] Reliability Standards Development Procedure, http://www.nerc.com/fileUploads/File/Standards/RSDP_V6_1_12Mar07.pdf
[7] NERC Rules of Procedure, http://www.nerc.com/files/NERC_Rules_of_Procedure_EFFECTIVE_20080321.pdf
[8] Reliability Standards Development Procedure, http://www.nerc.com/fileUploads/File/Standards/RSDP_V6_1_12Mar07.pdf
[9] NAESB http://www.nerc.com/page.php?cid=2|247|248

In Orders No. 693 and 693-A, *Mandatory Reliability Standards for the Bulk Power System*, and Order No. 890, *Preventing Undue Discrimination and Preference in Transmission Service*, the Commission built upon the information it provided in May 11, 2006 *Federal Energy Regulatory Commission Staff Preliminary Assessment of Proposed Reliability Standards* and the October 20, 2006 *Notice of Proposed Rulemaking — Mandatory Reliability Standards for the Bulk Power System*. In that Staff report, and then in the Commission's proposed rule, the FERC Staff initially, and then the Commission, stated that certain proposed standards are (1) ambiguous; (2) insufficient to ensure an adequate level of reliability; (3) fail to contain adequate "measures and compliance;" (4) may have an undue impact on competition; and (5) are "fill-in-the-blank" standards. The report and notice of proposed rulemaking (NOPR) also pointed out that NERC has not completed standards addressing all recommendations made following the August 2003 Northeast blackout. The work plan enclosed here is intended to address these issues, as well as previous comments and issues noted by industry in the initial development of the standards.

Order No. 672[10] provides guidance on the factors the Commission will consider when determining whether proposed reliability standards meet the statutory criteria. For example, the Commission states that a proposed reliability standard must be designed to achieve a specified reliability goal and be clear and unambiguous regarding what is required and who is required to comply. In addition, while a proposed reliability standard does not have to reflect the "best practice," it cannot be based on the "lowest common denominator," if such a standard would not efficiently and effectively achieve its reliability goal.

Plan Description

Overview

The Projects: A significant portion of this *Reliability Standards Development Plan: 2009–2011* is dedicated to projects for revising the existing reliability standards to incorporate improvements. The plan groups the existing standards into projects based on content. Standards with related content are grouped together into a single project to allow a team of experts to consolidate the requirements, to eliminate redundancies, and to ensure consistency of all the requirements in all the standards. This approach makes the most efficient use of industry resources used in the standards development process.

A total of 39 projects are summarized in Volume II. Some of the projects address revising a single standard, such as FAC-003. One of the largest projects includes revising nine standards focusing on related topics: transmission operator performance standards TOP-001 to TOP-008 and the transmission operator authority standard PER-001. Managing the projects in this manner will provide an opportunity to clearly separate certification requirements (the capability to be a competent transmission operator) from the requirements measuring ongoing reliability performance. Those requirements are co-mingled in the existing standards.

Note that the project number indicates the year the project was or will be initiated and the sequence within the year, adjusted according to the reorganization discussed earlier.

The Drafting Teams: The size and makeup of the drafting teams will be determined according to the project scope. Some drafting teams may choose to subdivide the work. The teams will focus on effectively integrating

[10] Order 672, http://www.nerc.com/files/final_rule_reliability_Order_672.pdf

the scope of the work within the project to ensure that the standards are consistent and comprehensive across the subject area.

Each drafting team will be provided a preliminary outline of the project scope, which is provided in Volume II, and then will prepare a Standard Authorization Request for industry review and comment. A unique development aspect of the projects included in the work plan, which is different from the development of the Version 0 translation, is that the drafting teams will not be inhibited from addressing at one time all necessary improvements to the standards, or from even proposing new changes to the standard, as long as the changes are within the content area of the standard. The goal is for the drafting team to develop the best possible standard within the defined subject area, as supported by a consensus of stakeholders.

The following list summarizes the projects included in this latest version of the *Reliability Standards Development Plan*:

Projects initiated in 2006:
2006-01 — System Personnel Training
2006-02 — Assess Transmission Future Needs
2006-03 — System Restoration and Blackstart
2006-04 — Backup Facilities
2006-06 — Reliability Coordination
2006-07 — Transfer Capabilities: ATC, TTC, CBM, and TRM
2006-08 — Transmission Loading Relief
2006-09 — Facility Ratings

Projects initiated in 2007:
2007-01 — Underfrequency Load Shedding
2007-02 — Operating Personnel Communications Protocols
2007-03 — Real-time Operations
2007-04 — Certifying System Operators
2007-05 — Balancing Authority Controls
2007-06 — System Protection Coordination
2007-07 — Vegetation Management
2007-09 — Generator Verification
2007-11 — Disturbance Monitoring
2007-12 — Frequency Response
2007-14 — Permanent Changes to CI Timing Table
2007-17 — Protection System Maintenance and Testing
2007-18 — Reliability-based Control
2007-23 — Violation Severity Levels

Projects initiated in 2008:
2008-01 — Voltage and Reactive Control
2008-02 — Undervoltage Load Shedding
2008-05 — Credible Multiple Element Contingencies
2008-06 — Cyber Security — Order 706
2008-08 — EOP Violation Severity Levels Revisions

2008-12 — Coordinate Interchange Standards

Projects anticipated to commence in 2009:
2009-01 — Disturbance and Sabotage Reporting
2009-02 — Real-time Tools
2009-03 — Emergency Operations
2009-04 — Phasor Measurements Units
2009-05 — Resource Adequacy Assessments

Projects anticipated to commence in 2010:
2010-01 — Support Personnel Training
2010-02 — Connecting New Facilities to the Grid
2010-03 — Modeling Data
2010-04 — Demand Data
2010-05 — Protection Systems

Projects anticipated to commence in 2011:
2011-01 — Equipment Monitoring and Diagnostic Devices

Regional Standards: Work on regional standards will be coordinated with the respective NERC projects. This plan includes Volume III *Regional Reliability Standards Projects*, which summarizes regional standard development activities that are anticipated through 2011. These are provided as a reference and to identify development activities that will further require industry resources.

Project Schedules: Several of the identified projects require studies to develop the technology or methods that need to be used in the standards. The studies are identified within the project descriptions and the schedules of the projects allow time to complete the studies. The studies have been requested of the NERC Operating and Planning Committees, as well as other groups with the appropriate expertise to complete the study. In some cases, the project schedules and timelines have been adjusted to reflect the expected completion date of the companion study as identified in the committee work plans.

Project schedules were estimated with a certain set of base assumptions regarding the number of postings of each Standard Authorization Request and draft standard and the time needed to complete underlying studies. Project schedules are intended to estimate milestones and provide an indication regarding the progress on the projects. However, in most instances NERC believes it will be more important to focus on ensuring that the standards are correct, rather than to rush them through the process. Therefore, NERC anticipates that schedules could change over time. The Standards Committee and NERC staff will oversee the work of the drafting teams to ensure that teams maintain a productive and necessary pace, and inefficiency is avoided. Where project teams are active, this version of the plan includes a link to the applicable project schedule posted on the NERC Web site that, in some cases, is different than that initially postulated in earlier versions of the plan. To provide the latest status of each project, the plan includes hyperlinks to the respective project Web pages.

A summary overall schedule for the projects detailed in this plan is provided in Volume II.

Strategy for Project Resources

Reliability Standards Development Plan: 2009–2011 has been designed to recognize there are limits to available staff and industry resources to complete the projects immediately and concurrently. While the volume of work and schedules are aggressive, they are manageable because the work is being extended over several years, and because much of the work is revising and improving existing standards for which the issues are already well-defined. However, the development of regional standards, the influx of formal interpretation requests, and the progress of the existing projects has impacted the deliverables noted in the plan and has been reflected in the proposed projects for 2009, 2010, and 2011.

The sequence of projects has been adjusted to spread the use of industry expertise over several years in the project. For example, system protection experts are a limited resource, as such each project requiring that expertise was spread out from the other for that reason. This same approach was used in sequencing most of the projects.

Global Improvements

Statutory Criteria

In accordance with Section 215 of the Federal Power Act, FERC may approve, by rule or order, a proposed reliability standard or modification to a reliability standard if it determines that "the standard is just, reasonable, not unduly discriminatory or preferential, and in the public interest."

The first three of these criteria can be addressed in large part by the diligent adherence to NERC's *Reliability Standards Development Procedure*, which has been certified by the ANSI as being open, inclusive, balanced, and fair. Users, owners, and operators of the bulk power system that must comply with the standards, as well as the end-users who benefit from a reliable supply of electricity and the public in general, gain some assurance that standards are just, reasonable, and not unduly discriminatory or preferential because the standards are developed through an ANSI-accredited procedure.

The remaining portion of the statutory test is whether the standard is "in the public interest." Implicit in the public-interest test is that a standard is technically sound and ensures a level of reliability that should be reasonably expected by end-users of electricity. Additionally, each standard must be clearly written, so that bulk power system users, owners, and operators are put on notice of the expected behavior. Ultimately, the standards should be defensible in the event of a governmental authority review or court action that may result from enforcing the standard and applying a financial penalty.

The standards must collectively provide a comprehensive and complete set of technically sound requirements that establish an acceptable threshold of performance necessary to ensure the reliability of the bulk power system. "An adequate level of reliability" would argue for both a complete set of standards addressing all aspects of bulk power system design, planning, and operation that materially affect reliability, and for the technical efficacy of each standard. The Commission directed NERC to define the term, "adequate level of reliability" as part of its January 18, 2007 Order on Compliance Filing. Accordingly, NERC's Operating and Planning Committees prepared the definition and the NERC Board approved it at its February 2008 meeting for filing with regulatory authorities. The NERC Standards Committee was then tasked to integrate the definition into the development of future reliability standards.

Quality Objectives

To achieve the goals outlined above, NERC has developed 10 quality objectives for the development of reliability standards. Drafting teams working on assigned projects are charged to ensure their work adheres to the following quality objectives:

1. **Applicability** — Each reliability standard shall clearly identify the functional classes of entities responsible for complying with the reliability standard, with any specific additions or exceptions noted. Such functional classes[11] include: ERO, Regional Entities, reliability coordinators, balancing authorities, transmission operators, transmission owners, generator operators, generator owners, interchange authorities, transmission service providers, market operators, planning coordinators, transmission planners, resource planners, load-serving entities, purchasing-selling entities, and distribution providers.

[11] These functional classes of entities are derived from NERC's Reliability Functional Model. When a standard identifies a class of entities to which it applies, that class must be defined in the Glossary of Terms Used in Reliability Standards.

Each reliability standard that does not apply to the entire North American bulk power system shall also identify the geographic applicability of the standard, such as an interconnection, or within a regional entity area. The applicability section of the standard should also include any limitations on the applicability of the standard based on electric facility characteristics, such as a requirement that applies only to the subset of distribution providers that own or operate underfrequency load shedding systems.

2. **Purpose** — Each reliability standard shall have a clear statement of purpose that shall describe how the standard contributes to the reliability of the bulk power system.
3. **Performance Requirements** — Each reliability standard shall state one or more performance requirements, which if achieved by the applicable entities, will provide for a reliable bulk power system, consistent with good utility practices and the public interest. Each requirement is not a "lowest common denominator" compromise, but instead achieves an objective that is the best approach for bulk power system reliability, taking account of the costs and benefits of implementing the proposal.
4. **Measurability** — Each performance requirement shall be stated so as to be objectively measurable by a third party with knowledge or expertise in the area addressed by that requirement. Each performance requirement shall have one or more associated measures used to objectively evaluate compliance with the requirement. If performance results can be practically measured quantitatively, metrics shall be provided within the requirement to indicate satisfactory performance.
5. **Technical Basis in Engineering and Operations** — Each reliability standard shall be based upon sound engineering and operating judgment, analysis, or experience, as determined by expert practitioners in that particular field.
6. **Completeness** — Each reliability standard shall be complete and self-contained. The standards shall not depend on external information to determine the required level of performance.
7. **Consequences for Noncompliance** — Each reliability standard shall make clearly known to the responsible entities the consequences of violating a standard, in combination with guidelines for penalties and sanctions, as well as other ERO and Regional Entity compliance documents.
8. **Clear Language** — Each reliability standard shall be stated using clear and unambiguous language. Responsible entities, using reasonable judgment and in keeping with good utility practices, are able to arrive at a consistent interpretation of the required performance.
9. **Practicality** — Each reliability standard shall establish requirements that can be practically implemented by the assigned responsible entities within the specified effective date and thereafter.
10. **Consistent Terminology** — Each reliability standard, to the extent possible, shall use a set of standard terms and definitions that are approved through the NERC Reliability Standards Development Process.

In addition to these factors, standard drafting teams also contemplate the following factors the Commission uses to approve a proposed reliability standard as outlined in Order No. 672. A standard proposed to be approved:

1. Must be designed to achieve a specified reliability goal

"321. The proposed Reliability Standard must address a reliability concern that falls within the requirements of section 215 of the FPA. That is, it must provide for the reliable operation of bulk power system facilities. It may not extend beyond reliable operation of such facilities or apply to other facilities. Such facilities include all those necessary for operating an interconnected electric energy transmission network, or any portion of that network, including control systems. The proposed

Reliability Standard may apply to any design of planned additions or modifications of such facilities that is necessary to provide for reliable operation. It may also apply to cyber security protection."

"324. The proposed Reliability Standard must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve this goal.
Although any person may propose a topic for a Reliability Standard to the ERO, in the ERO's process, the specific proposed Reliability Standard should be developed initially by persons within the electric power industry and community with a high level of technical expertise and be based on sound technical and engineering criteria. It should be based on actual data and lessons learned from past operating incidents, where appropriate. The process for ERO approval of a proposed Reliability Standard should be fair and open to all interested persons."

2. Must contain a technically sound method to achieve the goal

"324. The proposed Reliability Standard must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve this goal.

Although any person may propose a topic for a Reliability Standard to the ERO, in the ERO's process, the specific proposed Reliability Standard should be developed initially by persons within the electric power industry and community with a high level of technical expertise and be based on sound technical and engineering criteria. It should be based on actual data and lessons learned from past operating incidents, where appropriate. The process for ERO approval of a proposed Reliability Standard should be fair and open to all interested persons."

3. Must be applicable to users, owners, and operators of the bulk power system, and not others

"322. The proposed Reliability Standard may impose a requirement on any user, owner, or operator of such facilities, but not on others."

4. Must be clear and unambiguous as to what is required and who is required to comply

"325. The proposed Reliability Standard should be clear and unambiguous regarding what is required and who is required to comply. Users, owners, and operators of the Bulk-Power System must know what they are required to do to maintain reliability."

5. Must include clear and understandable consequences and a range of penalties (monetary and/or non-monetary) for a violation

"326. The possible consequences, including range of possible penalties, for violating a proposed Reliability Standard should be clear and understandable by those who must comply."

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

"327. There should be a clear criterion or measure of whether an entity is in compliance with a proposed Reliability Standard. It should contain or be accompanied by an objective measure of compliance so that it can be enforced and so that enforcement can be applied in a consistent and non-preferential manner."

7. Should achieve a reliability goal effectively and efficiently - but does not necessarily have to reflect "best practices" without regard to implementation cost

"328. The proposed Reliability Standard does not necessarily have to reflect the optimal method, or "best practice," for achieving its reliability goal without regard to implementation cost or historical regional infrastructure design. It should however achieve its reliability goal effectively and efficiently."

8. Cannot be "lowest common denominator," i.e., cannot reflect a compromise that does not adequately protect bulk power system reliability

"329. The proposed Reliability Standard must not simply reflect a compromise in the ERO's Reliability Standard development process based on the least effective North American practice — the so-called "lowest common denominator"—if such practice does not adequately protect Bulk-Power System reliability. Although the Commission will give due weight to the technical expertise of the ERO, we will not hesitate to remand a proposed Reliability Standard if we are convinced it is not adequate to protect reliability."

9. Costs to be considered for smaller entities but not at consequence of less than excellence in operating system reliability

"330. A proposed Reliability Standard may take into account the size of the entity that must comply with the Reliability Standard and the cost to those entities of implementing the proposed Reliability Standard. However, the ERO should not propose a "lowest common denominator" Reliability Standard that would achieve less than excellence in operating system reliability solely to protect against reasonable expenses for supporting this vital national infrastructure. For example, a small owner or operator of the Bulk-Power System must bear the cost of complying with each Reliability Standard that applies to it."

10. Must be designed to apply throughout North American to the maximum extent achievable with a single reliability standard while not favoring one area or approach

"331. A proposed Reliability Standard should be designed to apply throughout the interconnected North American Bulk-Power System, to the maximum extent this is achievable with a single Reliability Standard. The proposed Reliability Standard should not be based on a single geographic or regional model but should take into account geographic variations in grid characteristics, terrain, weather, and other such factors; it should also take into account regional variations in the organizational and corporate structures of transmission owners and operators, variations in generation fuel type and ownership patterns, and regional variations in market design if these affect the proposed Reliability Standard."

11. No undue negative effect on competition or restriction of the grid

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

12. Implementation time

"333. In considering whether a proposed Reliability Standard is just and reasonable, the Commission will consider also the timetable for implementation of the new requirements, including how the proposal balances any urgency in the need to implement it against the reasonableness of the time allowed for those who must comply to develop the necessary procedures, software, facilities, staffing or other relevant capability."

13. Whether the reliability standard process was open and fair

"334. Further, in considering whether a proposed Reliability Standard meets the legal standard of review, we will entertain comments about whether the ERO implemented its Commission-approved Reliability Standard development process for the development of the particular proposed Reliability Standard in a proper manner, especially whether the process was open and fair. However, we caution that we will not be sympathetic to arguments by interested parties that choose, for whatever reason, not to participate in the ERO's Reliability Standard development process if it is conducted in good faith in accordance with the procedures approved by the Commission."

14. Balance with other vital public interests

"335. Finally, we understand that at times development of a proposed Reliability Standard may require that a particular reliability goal must be balanced against other vital public interests, such as environmental, social and other goals. We expect the ERO to explain any such balancing in its application for approval of a proposed Reliability Standard."

15. Any other relevant factors

"323. In considering whether a proposed Reliability Standard is just and reasonable, we will consider the following general factors, as well as other factors that are appropriate for the particular Reliability Standard proposed."

"337. In applying the legal standard to review of a proposed Reliability Standard, the Commission will consider the general factors above. The ERO should explain in its application for approval of a proposed Reliability Standard how well the proposal meets these factors and explain how the Reliability Standard balances conflicting factors, if any. The Commission may consider any other factors it deems appropriate for determining if the proposed Reliability Standard is just and reasonable, not unduly discriminatory or preferential, and in the public interest. The ERO applicant may, if it chooses, propose other such general factors in its ERO application and may propose additional specific factors for consideration with a particular proposed reliability standard."

Issues Related to the Applicability of a Standard

In Order No. 672, the Commission states that a proposed reliability standard should be clear and unambiguous regarding what is required and who is required to comply. Users, owners, and operators of the bulk power system must know what they are required to do to maintain reliability. Section 215(b) of the FPA requires all "users, owners and operators of the bulk power system" to comply with Commission-approved reliability standards.

The term "users, owners, and operators of the bulk power system" defines the statutory applicability of the reliability standards. NERC's Reliability Functional Model (Functional Model) further refines the set of users, owners, and operators by identifying categories of functions that entities perform so the applicability of each

standard can be more clearly defined. Applicability is clear if a standard precisely states the applicability using the functions an entity performs. For example, "Each generator operator shall verify the reactive power output capability of each of its generating units" states clear applicability compared with a standard that states "a bulk power system user shall verify the reactive power output capability of each generating unit." The use of the Functional Model in the standards narrows the applicability of the standard to a particular class or classes of bulk power system users, owners, and operators. A standard is more clearly enforceable when it narrows the applicability to a specific class of entities than if the standard simply references a wide range of entities, e.g., all bulk power system users, owners, and operators.

In determining the applicability of each standard and the requirements within a standard, the drafting team should follow the definitions provided in the NERC Glossary of Terms Used in Reliability Standards and should also be guided by the Functional Model.

In addition to applying definitions from the Functional Model, the revised standards must address more specific applicability criteria that identify only those entities and facilities that are material to bulk power system reliability with regard to the particular standard.

The drafting team should review the registration criteria provided in the NERC Statement of Compliance Registry Criteria, which is the criteria for applicability. The registration criteria identify the criteria NERC uses to identify those entities responsible for compliance to the reliability standards. Any deviations from the criteria used in the Statement of Compliance Registry Criteria must be identified in the applicability section of the. It is also important to note that standard drafting teams cannot set the applicability of reliability standards to extend to entities beyond the scope established by the criteria for inclusion on NERC's Compliance Registry. This is expressly prohibited by Commission Order No. 693-A.

The goal is to place obligations on the entities whose performance will impact the reliability of the bulk power system, but to avoid painting the applicability with such a broad brush that entities are obligated even when meeting a requirement will make no material contribution to bulk power system reliability.

Every entity class described in the Functional Model performs functions that are essential to the reliability of the bulk power system. This point is best highlighted with the example that might be the most difficult to understand, the inclusion of distribution providers. Section 215 of the FPA specifically excludes facilities used in the local distribution of electric energy. Nonetheless, some of the NERC standards apply to a class of entities called distribution providers. Distribution providers are covered because, although they own and operate facilities in the local distribution of electric energy, they also perform functions affecting and essential to the reliability of the bulk power system. With regard to these facilities and functions that are material to the reliability of the bulk power system, a distribution provider is a bulk power system user. For example, requirements for distribution providers in the reliability standards apply to the underfrequency load shedding relays that are maintained and operated within the distribution system to protect the reliability of the bulk power system. There are also requirements for distribution providers to provide demand forecast information for the planning of reliable operations of the bulk power system.

A similar line of thinking can apply to every other entity in the Functional Model, including load-serving entities and purchasing-selling entities, which are users of the bulk power system to the extent they transact business for the use of transmission service or to transfer power across the bulk power system. NERC has specific requirements for these entities based on how these uses may impact the reliability of the bulk power

systems. Other functional entities are more obviously bulk power system owners and operators, such as reliability coordinators, transmission owners and operators, generator owners and operators, planning coordinators, transmission planners, and resource planners. It is the extent to which these entities provide for a reliable bulk power system or perform functions that materially affect the reliability of the bulk power system that these entities fall under the jurisdiction of Section 215 of the FPA and the reliability standards. The use of the Functional Model simply groups these entities into logical functional areas to enable the standards to more clearly define the applicability.

Issues Related to Regional Entities and Reliability Organizations

Because of the transition from voluntary reliability standards to mandatory reliability standards, confusion has occurred over the distinction between Regional Entities and Regional Reliability Organizations. The regional councils have traditionally been the owners and members of NERC. They have been referred to as Regional Reliability Organizations in the Functional Model and in the reliability standards. In an era of voluntary standards and guides, it was acceptable that a number of the standards included requirements for Regional Reliability Organizations to develop regional criteria, procedures, and plans, and included requirements for entities within the region to follow those requirements. Section 215 of the FPA introduced a new term, called "Regional Entity." Regional Entities have specific delegated authorities, under agreements with NERC, to propose and enforce reliability standards within the region, and to perform other functions in support of the electric reliability organization. The former Regional Reliability Organizations have entered into delegation agreements with NERC to become Regional Entities for this purpose.

With regard to distinguishing between the terms Regional Reliability Organizations and Regional Entities, the following guidance should be used. The corporations that provide regional reliability services on behalf of their members are Regional Reliability Organizations. NERC may delegate to these entities a set of regional entity functions. The Regional Reliability Organizations perform delegated regional entity functions much like NERC is the organization that performs the ERO function. Regional Reliability Organizations may do things other than their statutory or delegated regional entity functions.

With the regions having responsibility for enforcement, it is no longer appropriate for the regions to be named as responsible entities within the standards. The work plan calls for removing requirements from the standards that refer to Regional Reliability Organizations, either by deleting the requirements or redirecting the responsibilities to the most applicable functions in the Functional Model, such as planning coordinators, reliability coordinators, or resource planners. In instances where a regional standard or criteria are needed, the ERO may direct the Regional Entities to propose a regional standard in accordance with ERO Rule 312.2, which states NERC, may "direct regional entities to develop regional reliability standards." There is no need to have a NERC standard that directs the regions to develop a regional standard. NERC standards should only include requirements for Regional Entities in those rare instances where the regions have a specific operational, planning, or security responsibility. In this case, Regional Entities (or NERC) may be noted as the applicable entity. However, these Regional Entities (or NERC) are held accountable for compliance to these requirements through NERC's rules of procedure that, by delegation agreement, extend to the Regional Entities. The Regional Entities are not users, owners, or operators of the bulk power system and cannot be held responsible for compliance through the compliance monitoring and enforcement program. However, NERC and the Regional Entities can be held by the Commission to be in violation of its rules of procedure for failing to comply with the standards requirements to which it is assigned.

Many of the so-called regional "fill-in-the-blank" standards can be rewritten as North American standards, without diluting the requirements to a least-common-denominator solution. The "fill-in-the-blank" work plan included in Volume III of the first edition of the work plan addressed specific examples of standards that will become North American standards as a result of the projects in this work plan. These have been incorporated in total in this updated work plan. In those few cases where Regional Entities are required to develop regional standards, such as in underfrequency load shedding, NERC can direct the regions to propose such standards and may, if necessary, develop a uniform North American standard to serve as a default.

Issues Related to Ambiguity

Drafting teams should strive to remove all potential ambiguities in the language of each standard, particularly in the performance requirements. Redundancies should also be eliminated.

Specifically, each performance requirement must be written to include four elements:

- **Who** — defines which functional entity or entities are responsible for the requirements, including any narrowing or qualifying limits on the applicability to or of an entity, based on material impact to reliability.
- **Shall do what —** describes an action the responsible entity must perform.
- **To what outcome** — describes the expected, measurable outcome from the action.
- **Under what conditions** — describes specific conditions under which the action must be performed. If blank, the action is assumed to be required at all times and under all conditions.

Drafting teams should focus on defining measurable outcomes for each requirement, and not on prescribing *how* a requirement is to be met. While being more prescriptive may provide a sense of being more measurable, it does not add reliability benefits and may be inefficient and restrict innovation.

Issues Related to Technical Adequacy

In May 2006, the Commission Staff issued an assessment on the then proposed reliability standards. The Staff noted under a "technical adequacy" section that requirements specified in some standards may not be sufficient to ensure an adequate level of reliability. While Order No. 672 notes that "best practice" may be an inappropriately high standard, it also warns that a "lowest common denominator" approach will not be acceptable if it is not sufficient to ensure system reliability.

Each standard should clearly meet the statutory test of providing an adequate level of reliability to the bulk power system. Each requirement should be evaluated and the bar raised as needed, consistent with good practice and as supported by consensus.

Issues Related to Compliance Elements

Each reliability standard includes a section to address measures and a section to address compliance. Most of the major changes made to the template for reliability standards over the past year have been focused on re-aligning the content of standards to include the various elements needed to support mandatory compliance. The Uniform Compliance Enforcement Guidelines, ERO Sanctions Guidelines, and Compliance Registry Criteria have been modified and have been approved by the Commission. As each standard is revised, or as new standards are developed, drafting teams need to familiarize themselves with these documents to ensure that each

standard proposed for ballot is in a format that includes all the elements needed to support reliability and to ensure that the standard can be enforced for compliance.

The compliance-related elements of standards that may need to be modified to meet the latest approved versions of the various compliance documents noted above include the following:

- Each requirement must have an associated Violation Risk Factor.

  NERC is currently working through its Standards Committee to propose a modified model for Violation Risk Factors that if approved for use by the regulatory authorities will require the inclusion of a project to re-evaluate existing violation risk factor assignments. A project in support of this initiative is not expected until late 2009 at the earliest and will be contemplated for the next update of the work plan when greater certainty on project direction is expected.

- Each requirement must have an associated Time Horizon.
- The term, "Compliance Monitor" has been replaced with the term, "Compliance Enforcement Authority." Either the Regional Entity or the ERO may serve as the compliance enforcement authority. For most standards, the Regional Entity will serve as the compliance enforcement authority. In the situation where a Regional Entity has authority over a reliability coordinator, for example, the ERO will serve as the compliance enforcement authority to eliminate any conflict of interest.
- The eight processes used to monitor and enforce compliance have been assigned new names.
  - Compliance Audits
  - Self-Certifications
  - Spot Checking
  - Compliance Violation Investigations
  - Self-Reporting
  - Periodic Data Submittals
  - Exception Reporting
  - Complaints
- The audit cycles for various entities have been standardized so that the Reliability Coordinator, Transmission Operator, and Balancing Authority will undergo a routine audit to assess compliance with each applicable requirement once every three years while all other responsible entities will undergo a routine audit once every six years.
- Levels of Non-compliance have been replaced with "Violation Severity Levels."

All requirements are subject to compliance audits, self-certification, spot checking, compliance violation investigations, self-reporting and complaints. Only a subset of requirements is subject to monitoring through periodic data submittals and exception reporting.

Measures: While a measure can be used for more than one requirement, there must be at least one measure for each requirement. A measure states what a responsible entity must have or do to demonstrate compliance to a third party, i.e., the compliance enforcement authority. Measures are "yardsticks" used to evaluate whether required performance or outcomes have been achieved. Measures do not add new requirements or expand the

details of the requirements. Each measure shall be tangible, practical, and objective. A measure should be written so that achieving full compliance with the measure provides the compliance monitor with the necessary and sufficient information to demonstrate that the associated requirement was met by the responsible entity. Each measure should clearly refer to the requirement(s) to which it applies.

Violation Severity Levels: The Violation Severity Levels (formerly known as Levels of Non-Compliance) indicate how severely an entity violated a requirement. For example, in the Commission-approved standard on vegetation management (FAC-003-1 Vegetation Management Program), there are three Levels of Non-Compliance. The levels range from whether or not a respective program has all necessary documentation to meet the requirements to the number of transmission outages due to tree contacts. Historically, there has been confusion about Levels of Non-Compliance. Some of the existing Levels of Non-Compliance incorporate reliability-related risk impacts or consequences. Going forward, the risk or consequences component should be addressed only by the Violation Risk Factor, while the Violation Severity Levels should only be used to categorize how badly the requirement was violated.

The Commission directed NERC to submit Violation Severity Levels for each of these 83 standards by March 1, 2008. Project 2007-23 in this updated work plan is the project team tasked with this effort. The drafting team should indicate a set of Violation Severity Levels that can be applied for the requirements within a standard. Violation Severity Levels replace the existing Levels of Non-Compliance. The Violation Severity Levels may be applied for each requirement or combined to cover multiple requirements, as long as it is clearly embedded within the compliance section of a standard which requirements are included.

Violation Risk Factors: Each drafting team is also instructed to develop a Violation Risk Factor for each requirement in a standard in accordance with the following definitions:

- **High Risk Requirement** — A requirement that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.
- **Medium Risk Requirement** — A requirement that, if violated, could directly affect the electrical state or the capability of the bulk power system, or the ability to effectively monitor and control the bulk power system. However, violation of a medium risk requirement is unlikely to lead to bulk electric system instability, separation, or cascading failures; or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system. However, violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk power system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.
- **Lower Risk Requirement** — A requirement that is administrative in nature and, a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system. A requirement that is administrative

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

Time Horizons: The drafting team must also indicate the time horizon available for mitigating a violation to the requirement:

- **Long-term planning** — a planning horizon of one year or longer.
- **Operations planning** — operating and resource plans from day ahead up to and including seasonal.
- **Same-day operations** — routine actions required within the timeframe of a day, but not real time.
- **Real-time operations** — actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations assessment** — follow-up evaluations and reporting of real time operations.

Note that some requirements occur in multiple time horizons, and it is acceptable to have more than one time horizon for a single requirement.

The drafting team should seek input and review of all measures and compliance information from the compliance elements drafting team members assigned to support each standard drafting team or from the NERC compliance staff.

Fill-in-the-Blank Standards

The phrase "fill-in-the-blank" standards have been coined to refer to those standards that require a bulk power system user, owner, or operator to follow regional criteria that are not part of a NERC Reliability Standard. These "fill-in-the-blank" standards have been identified and discussed earlier in these comments. The practice of using "fill-in-the-blank" standards was acceptable historically when standards were voluntary, but not with standards that are mandatory and enforceable under statutory authority.

NERC recognized this issue early in the process of developing its application to become the ERO. NERC formed and staffed a program to coordinate the development of regional standards and to address the "fill-in-the-blank" issue. A team with representation from each region was formed and reviewed these particular standards to prepare recommendations for a course of action. The action plan and schedule to resolve each "fill-in-the-blank" standard were provided in Volume III of the original 2007-2009 plan and has been wholly incorporated into the projects identified in Volume II of the updated work plan.

There are several possible outcomes with regard to each of these particular standards. The work team completed a review to verify which standards are in fact "fill-in-the-blank," i.e., they require the responsible entity to perform in accordance with regional criteria that are outside the NERC Reliability Standards. There are several options to address each standard on a case-by-case basis:

Analysis Results	Recommended Action
Insufficient justification for regional differences.	Replace the standard with a uniform North American standard.
Mandatory enforcement is necessary for reliability but regional differences are justified.	Direct the regions to develop their regional criteria as consistent standards to be filed with NERC, FERC, and the applicable authorities in Canada for approval as ERO standards.
Mandatory enforcement is not necessary for reliability.	Retire the NERC standard and allow the regions to maintain voluntary criteria and procedures as needed to coordinate reliability in the region. No enforcement mechanism is provided under the FPA.

NERC supports the strong preference of the Commission for consistency with regard to regional standards, with statutory deference for regions organized on an interconnection-wide basis as required by statute. NERC will work to achieve such consistency and to provide sufficient justification for regional standards or variations to the NERC standards that are filed for Commission approval.

Coordination with NAESB

Many of the existing NERC standards are related to business practices, although their primary purpose is to support reliability. Reliability standards, business practices, and commercial interests are inextricably linked. An example of an existing standard that is both a reliability standard and a business practice is the Transmission Loading Relief (TLR) Procedure currently used as an interconnection-wide congestion management method in the Eastern Interconnection.

It would be safe to conclude that every reliability standard has some degree of commercial impact and therefore impacts competition. The statutory test to be applied by the Commission is whether the reliability standard has an "undue adverse effect" on competition.

NERC has taken several steps to ensure its reliability standards do not have any undue, adverse impact on business practices or competition. First, NERC coordinates the development of all standards with the North American Energy Standards Board (NAESB). In addition to this formal process, drafting teams work with NAESB groups to ensure effective coordination of wholesale electric business practice standards and reliability standards. NERC and NAESB follow their procedure for the joint development of standards in areas that have both reliability and business practice elements. This procedure is being implemented for all standards in which the reliability and business practice elements are closely related, thereby making joint development a more efficient approach.

This work plan includes several projects that require close coordination and joint development with NAESB:

- Project 2006-07 — Transfer Capabilities — (ATC, TTC, CBM, TRM)
- Project 2006-08 — Transmission Loading Relief
- Project 2007-05 — Balancing Authority Controls
- Project 2007-18 — Reliability Based Control
- Project 2008-01 — Voltage and Reactive Control
- Project 2008-12 — Coordinate Interchange Standards
- Project 2009-03 — Emergency Operations
- Project 2010-02 — Connecting New Facilities to the Grid

To ensure each reliability standard does not have an undue adverse effect on competition, NERC requires that each standard meet the following criteria:

- Competition — A reliability standard shall not give any market participant an unfair competitive advantage.
- Market Structures — A reliability standard shall neither mandate nor prohibit any specific market structure.
- Market Solutions — A reliability standard shall not preclude market solutions to achieve compliance with that standard.
- Commercially Sensitive Information — A reliability standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards.

During the standards development process, each Standards Authorization Request (SAR) drafting team asks the following question to determine if there is a need to develop a business practice associated with the proposed standard:

- Are you aware of any associated business practices that we should consider with this SAR?

Each standard drafting team also asks the following question to determine if there is a potential conflict between a reliability standard and business practice:

- Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement, or agreement? If yes, please identify the conflict.

Additional Considerations

Drafting teams should consider the following in reviewing and revising their assigned standards:

- **Title**: In general, the title should be concise and to the point. Care should be taken not to try to fully describe a standard through its title. The title should fit a single line in both the header and in the body of the standard.
- **Purpose**: Current purpose statements are inconsistent. The purpose should clearly state a benefit to the industry (value proposition) in fulfilling the requirements. The purpose should not simply state "the purpose is to develop a standard to…" The purpose should be tied to one or more of the reliability principles.
- **References**: A new section (F) has been added to the standards template for a listing of associated references that support implementation of the standard. Drafting teams may develop or reference supporting documents and provide a link in this section with approval of the Standards Committee.
- **Version histories**: Version histories should be expanded to include complete listings of what has been changed from version to version so that end-users can easily keep track of changes to standards. This will also serve as a type of audit trail for changes.

Resource Documents Used

NERC used several references when preparing this plan. These references provide detailed descriptions of the issues and comments that need to be considered by the drafting teams, which are included in the second volume of the work plan, as they work on the standards projects defined in the plan. The references include:

- FERC NOPR on Reliability Standards, October 20, 2006.
- FERC Staff Preliminary Assessment of Proposed Reliability Standards, May 11, 2006.
- FERC Order No. 693 Mandatory Reliability standards for the Bulk Power System, March 16, 2007.
- FERC Order No. 693-A Mandatory Reliability Standards for the Bulk Power System, July 19, 2007.
- FERC Order No. 890 Preventing Undue Discrimination and Preference in Transmission Service, February 16, 2007.
- Comments of the North American Electric Reliability Council and North American Electric Reliability Corporation on Staff Preliminary Assessment of Reliability Standards, June 26, 2006.
- Comments of the North American Electric Reliability Corporation on Staff Preliminary Assessment of NERC Standards CIP-002 through CIP-009, February 12, 2007.
- Comments of the North American Electric Reliability Corporation on the Notice of Proposed Rulemaking for Facilities Design, Connections and Maintenance Reliability standards, September 19, 2007.
- Comments received during the development of Version 0 reliability standards.
- Consideration of comments of the Missing Compliance Elements drafting team.
- Consideration of comments of the Violation Risk Factors drafting team.
- Consideration of comments in the Phase III–IV standards.
- Comments received during industry comment period on work plan.
- Q&A for Standards and Compliance.

Appendix A — Summary of Industry Comments

Reliability Standards Development Plan 2009-2011
As of September 16, 2008

Comment 1

Name: David Schiada

Organization: SCE

Standard Title(s): To The NERC Reliability Standards Development Plan

Suggestion or Comment: Southern California Edison Company ("SCE") hereby submits its comments on the North American Electric Reliability Corporation's ("NERC") annual revision to the NERC Reliability Standards Development Plan (Plan).

SCE greatly appreciates the work that went into developing the Plan, and commends the NERC for the extensive overview and depth it provides regarding the development of reliability standards. SCE is generally supportive of the document and the goals NERC has set for the development of reliability standards. While the timelines identified in the Plan, like the Plan itself, are dynamic (non-static/ever changing) and should be used as targets, it should be recognized that timelines may need to be modified as drafting teams obtain more details on the scope of the projects.

NERC Response:
NERC staff agrees with SCE that that the timeline for any particular project may need to be modified as the respective drafting team for the project obtains additional details in the process of working on the project. It is NERC's goal to develop quality standards in a timeframe that is responsive to industry needs. It is not the intent of NERC staff to drive standards development projects to meet a particular schedule unless there is a specific need to meet a specific deadline.

Comment 2

Name: Denise Koehn

Organization: BPA

Project Number(s): 2007-07; 2009-07

Project Title(s): Vegetation Management; Cyber Security

Suggestion or Comment: Both of these projects should be "fast-tracked". All of the covered standards are the source of intense pressure from FERC and NERC, through the RROs, to the entities. In light of the importance this pressure implies, these standards should be corrected and perfected as soon as possible. With respect to FAC-003, there is ambiguity in what requirement to report when you have a Category 1 violation. Lots of people think they are supposed to report a violation of R3.4.1 when they have a Category 1 outage. The correct interpretation of what actually constitutes a violation should be clarified in the requirements language. With respect to the CIP standards, these standards are written in confusing, ambiguous, and conflicting ways that are causing the expenditure of large amounts of staff time and labor to try to reach agreement on how to meet them. For example, in both

CIP-004 R2 and CIP-004 R3, there are conflicting provisions to provide training and perform personnel risk assessments UPON RECEIVING ACCESS as well as ANNUALLY. The relationship between these two requirements is not identified at all, so a strict interpretation would force an entity to give the training and perform the personnel risk assessment on the same employee several times a year if that person's access privileges changed, for example if they moved from internal job to internal job.

NERC Response:

NERC staff agrees with BPA's suggestion of the importance of Project 2007-07 Vegetation Management and Project 2009-07 Cyber Security.

Project 2007-07 Vegetation Management is an active project. The standard drafting team for this project is working hard to bring the project to a close and is on target for completion in the first quarter of 2009.

With regard to Project 2009-07 Cyber Security, Project 2008-06 Cyber Security Order 706 has been initiated negating the need for Project 2009-07 Cyber Security. With this 2008 revision of the Reliability Standards Development Plan, Project 2009-07 Cyber Security is being eliminated and replaced with Project 2008-06 Cyber Security Order 706. Work on revising CIP standards 002 through 009 is already underway.

Suggestion or Comment: The NERC Reliability Standards work plan should consider a review of the need for a standard on Interconnection Operations Services and associated definitions related to ancillary services addressed in the pro-forma.

Recommendation for improvement: We believe that this review should be a joint NERC/NAESB project and is necessary due to the modifications that NERC has made in its reliability standards and definitions. These need to be reflected appropriately in the pro-forma language under the tariff schedules (Schedules 1 - 6 & 9).

NERC Response:

NERC, as the Electric Reliability Organization, is tasked with establishing measurable criteria for performance. While Interconnection Operations Services and/or Ancillary Services are products that can aid in meeting ERO-defined performance objectives, they are not in themselves performance criteria; however, NERC will coordinate with NAESB to the extent practical in the development of definition of Interconnection Operations Services and Ancillary Services terms.

Comment 3

Name: Louis Slade

Organization: Dominion Resources Services, Inc.

Project Number(s): 2009-01 and 2009-07

Project Title(s): Disturbance and Sabotage Reporting and Cyber Security

Suggestion or Comment: Given the mood of FERC I suggest to move them into 2009. At the very least, participants can fully vet reasons for the need to move with due diligence and caution.

NERC Response:

Project 2009-01 Disturbance and Sabotage Reporting is already scheduled to commence in 2009.

With regard to Project 2009-07 Cyber Security, Project 2008-06 Cyber Security Order 706 has been initiated negating the need for Project 2009-07 Cyber Security. With this 2008 revision of the Reliability Standards Development Plan, Project 2009-07 Cyber Security is being eliminated and replaced with Project 2008-06 Cyber Security Order 706. Work on revising CIP standards 002 through 009 is already underway.

Suggestion or Comment: Develop timeline for regions to develop 'fill-in-the blank' standards. Currently some regions are doing nothing while others have gone beyond the original 4 standards. Entities participating in many regions find this inconsistency to be frustrating.

Recommendation for improvement: Develop timeline for the 4 already identified 'fill-in-the blank' standards. Develop process that requires region(s) desiring additional regional standards first justify the need before NERC rather than develop and then submit to NERC hoping for approval.

NERC Response:

NERC standards staff is in regular contact with the individuals at each of the Regional Entities responsible for developing regional reliability standards. Coordination of the four standards you reference above is ongoing. In many instances, the Regional Entity has decided to commence work on the four 'fill-in-the blank' standards in order to able to better coordinate the development of the regional standard with the development of the continent-wide standard. This actually is to the benefit of those entities in the region affected by the standard.

Each Regional Entity has a FERC-approved regional standard development procedure. Embedded in the regional standard development process, a region seeking approval of a regional reliability standard must justify the need for the standard. It is incumbent on those that participate in the regional standards development process to determine the need to expend resources on developing a standard as they deem appropriate. Each of the regional standards development procedure mandates a fair and open process for the development of standards. As such any interested party in the region should have a voice in which standards development projects are pursued and which standards are not. NERC cannot require a Regional Entity to justify a regional standard before it is developed.

Comment 4

Name: Jack Kerr

Organization: Dominon Virginia Power

Suggestion or Comment: The Reliability Standards Development Plan should include the recommendations for new or improved reliability standards documented in the final report of the RTBPTF. One of the primary directives of the task force was to produce recommendations to inform the standards setting process. The best way to inform the process is to incorporate the recommendations into the Reliability Standards Development Plan. Given the enormous amount of work that the Plan currently entails, it would be reasonable to focus on the higher priority recommendations. These include the recommendations for mandatory reliability tools (the Reliability Toolbox).

NERC Response:

With this 2008 revision to the Reliability Standards Development Plan, a new project (Project 2009-02 Real-time Tools) has been identified for implementing the identified by the NERC Real-Time Tools Best Practices Task Force (RTBPTF) and documented in their report titled *Real-Time Tools Survey Analysis and Recommendations* and dated March 13, 2008

Suggestion or Comment: I am willing to assist NERC staff in the effort of prioritizing the recommendations from the RTBPTF Report and transcribing them into whatever format is appropriate for the Standards Development Plan.

NERC Response:

Thank you for the offer to assist NERC staff in the effort of prioritizing the recommendations from the RTBPTF Report; however, the standards drafting team appointed to Project 2009-02 Real-time Tools will be responsible proposing a priority for implementing the RTBPTF recommendations. Your offer is much appreciated though.

Comment 5

Name: R. W. Kenyon, J.D., P.E.

Organization: NERC

Reliability Issue: Reliability of Major BES Components

Suggestion or Comment: Develop Reliability Standards covering the application of major equipment monitoring and diagnostic devices and procedures.

Example: The Reliability Standard would address dissolved gas and moisture sampling processes and the application on on-line monitoring devices to detect incipient faults within BES major components, such as EHV transformers. These processes and devices enable the equipment owner to detect evolving internal faults, allowing corrective action under controlled conditions. In some instances, early warning of evolving faults can permit field repair of the unit, avoiding a system fault and destruction of a major piece of equipment. In other circumstances, the warning obtained permits the equipment owner to monitor the situation and to schedule unit replacement in a deliberate, controlled manner. Again, occurrence of a major system fault and unscheduled loss of a major unit can be avoided. Obviously, such measures can contribute significantly to reliability of the Bulk Electric System.

Recommendation for improvement: Ideally, the envisioned standard would make the application of this technology mandatory for classes of critical equipment, with EHV transformers and shunt reactors an obvious example. Similar diagnostic approaches should be taken on critical EHV and/or major generator Gas Insulated Switchgear. The general approach could follow PRC-005, where the owner must have a system, but particulars are left to the equipment owner. The standard could extend to other equipment condition monitoring such as Doble testing.

In many instances, equipment owners already recognize the value of major equipment monitoring and have equipment and/or procedures in place addressing this technology. However, there is far less assurance that monitoring equipment is properly maintained, that scheduled routine sampling is being fully performed, and that full use is being made of data obtained. Again, as with the Protective Relay Standard PRC-005, the standard would contribute to insuring that equipment owners indeed have a program addressing this technology and are indeed following their program. In other instances, equipment owners without such equipment might be obligated to establish a monitoring program.

NERC Response:

Because of your suggestion, a new project (2011-01 Equipment Monitoring and Diagnostic Devices) has been added to this 2008 revision of the Reliability Standards Development Plan to consider the development Reliability Standard(s) covering the application of major equipment monitoring and

diagnostic devices and procedures.

Comment 6

Name: Charlie Deleon

Organization: NRG

Reliability Issue: TLR procedures are not where they need to be today to promote a healthy, reliable, and fair transmission system.

Suggestion or Comment: NERC has acknowledged that improvements need to be made to the TLR process and that the Interchange Distribution Calculator (IDC) used by Reliability Coordinators is not sufficient to show actual system use. The serious increase in number and excessive use of TLR Level 5's in certain areas of the eastern interconnect result in reduced system reliability. NERC must take action to revise its TLR standards to address these issues.

Flaws in the IDC calculator lead to flaws in the curtailments and NNL relief obligations relied upon by Reliability Coordinators to ensure the integrity of the transmission system. The IDC calculator does not include real time data while modeling load uses. The IDC calculator, while looking at interchange transactions (i.e., transaction where the source and the sink are in different balancing authorities) correctly, does not properly reflect internal transactions (i.e., transactions where the source and sink are in the same balancing authority). This allows firm transactions to be cut on a constrained flowgate before non-firm transactions.

These issues are making it extremely difficult for Balancing Authorities to reliably manage their systems and plan for emergencies.

Example: For example, a single IPP located in Balancing Authority A and simultaneously selling firm power into Balancing Authority B and non-firm power to Balancing Authority B could have its firm transmission to Balancing Authority B curtailed by the IDC, while the non-firm transmission into Balancing Authority A would remain intact. This is true even if the transactions flowed across the same constrained flowgate because the internal Balancing Authority A schedule would not be considered by the IDC. Further, since every transaction in or out of the Balancing Authority B is considered interchange transactions, the IDC evaluates each Balancing Authority B firm transmission transactions for curtailment. Internal purchases by Balancing Authority A, however, are not subject to the same rigorous curtailment analysis.

Recommendation for improvement: The IDC needs to be modified to take into account real time topology. Due to the lack of any requirement to update input information, the IDC uses static information that does not reflect real time operations resulting IDC calculations which determine flowgate relief being incorrect since they are solving for constraints based on a transmission topology which differs from real time system topology. Also, the IDC does not properly capture and reflect internal schedules. The impacts on the flowgate are not considered by the IDC even though they could have a significant impact on the constraint. The result is that entities engaging in interchange transactions bear a disproportionate share of the system's reliability obligations.

The current TLR process allows non-firm transactions with a TDF of less than 5% to continue to flow. All contributing non-firm transactions should be curtailed first

NERC with input from the industry needs to address the flaws in the current process today that are threatening system reliability.

NERC Response:

NERC has received a SAR related to these same concerns. The SAR was jointly submitted by the Midwest ISO, PJM, and SPP, and is titled "Parallel Flow Visualization/Mitigation for Reliability Coordinators in the Eastern Interconnection." NERC suggests that these comments be submitted as part of the standards development process associated with the SAR once it is posted for industry comment.

Comment 7

Name: Patrick Brown

Organization: PJM

Reliability Issue: Reliability Standards Development Plan 2008-2010

Suggestion or Comment: PJM commends the NERC staff and industry contributors that put many hours of work into the development and revision of the Reliability Standards Development Plan: 2008-2010. Such efforts are greatly appreciated, and are key to guiding the work necessary in enhancing and ensuring the reliability of the bulk electric system. However, PJM is concerned with the scope and number of projects contained in the Reliability Standards Development Plan: 2008-2010. The plan contains 36 Standards Development Projects, provision for 6 high priority projects and up to 17 requests for formal interpretations of existing standard requirements in 2008 & 2009. With up to 9 standards included in each project, this presents an impressive undertaking that will tax not only NERC's resources, but that of the rest of the industry as well. With up to 15 industry representatives on each project, in addition to the need for thorough review and analysis of each recommended change, the limited NERC staff and industry resources will not be able to effectively support this large number of projects. This lack of resources, as well as unexpected delays in projects initiated in previous years, has already resulted in a number of projects being carried over into subsequent years. In addition to the increase in the overall number of projects, the current plan has also expanded the scope of work within each project to include a number of additions and modifications. Although this expansion is based in part on FERC directives emphasizing the urgency of the development of reliability standards, PJM does not believe that the work plan recognizes the reality of limited staff and industry resources to complete the projects as outlined in the current version of the plan. PJM recommends that NERC reevaluate its plan and develop a smaller list of priority projects that will yield the greatest impact to the reliability of the bulk electric system. This will allow NERC and the industry to address FERC and industry concerns regarding the reliability and security of the system while at the same time effectively managing the standards development work load. PJM also believes that the development of violation risk factors needs to be done in a uniform manner across all standards. NERC, with industry and regulatory input, should develop a well defined process for the development of VRF's to ensure this uniformity.
PJM fully supports NERC coordination with NAESB. However, the development of NERC Reliability

Standards should be closely monitored to ensure that all requirements related to business practices are developed under NAESB Standards rather than being included in the NERC Standards. A good example is the MOD standards, where the frequency of AFC and ATC calculations, an obvious business practice, was included in a NERC Reliability Standard. Again, PJM commends the NERC staff and industry contributors for their efforts in compiling a comprehensive work plan. We believe that the suggestions we have provided above will enhance the good work that has already been done, and help to ensure the security and reliability of the bulk electric system.

NERC Response:

NERC appreciates the industry resources necessary for the development of quality standards and is

cognizant of the fact that industry resources are not limitless. NERC staff coordinates all standards development activities through the NERC Standards Committee whose membership consists of industry representatives. In compliance with the NERC Reliability Standards Development Procedure, the Standards Committee manages the NERC standards development process to achieve broad bulk power system reliability goals for the industry. The Standards Committee protects the integrity and credibility of the standards development process. NERC staff facilitation of the standards development process in coordination with the Standards Committee takes into consideration the potential impact on industry resources when planning standards related projects and activities. Specific comments in how this Reliability Standards Development Plan could be modified to more effectively use industry resources are welcome.

With respect to the development of VRFs, the Process Subcommittee of the Standards Committee has taken on the responsibility of documenting how drafting teams should address Violation Risk Factors.

With respect to the coordination with NASBE, NERC coordinates with NAESB on a regular basis. Andy Rodriquez is NERC's Manager of Business Practice Coordination and is responsible to, among other things, ensure that coordination with NAESB takes place in the development of standards. Additionally, during this 2008 revision to the Reliability Standards Development Plan, NERC received comments from the NAESB Wholesale Electric Quadrant (WEQ) Standards Review Subcommittee and incorporated received comments into the revised version of Volume II of the plan.

Comment 8

Name: Mark L Bennett

Organization: Gainesville Regional Utilities

Suggestion or Comment: My comment is more of a global observation. Of all the North American entities that are doing their best to accommodate the ever-changing standards and interpretation of the standards, it would be my suggestion to review and enforce what presently exists and ensure that all the standards are clear and unambiguous. Which I believe has taken place for the most part. In addition, I believe it is time to "resist implementing and developing new standards" until the industry catches up with all the changes that have taken place in recent years. Staffing has become a major issue with some of the smaller entities as to understanding and responding to the extreme amount of data and time required to ensure that all the standards are met within specific time frames.

Recommendation for improvement: Give the industry time to adapt to the changes that have taken place in the recent past.

NERC Response:

NERC appreciates the amount of industry resources necessary for the development of quality standards and is cognizant of the fact that industry resources are not limitless. NERC staff coordinates all standards development activities through the NERC Standards Committee whose membership consists of industry representatives. In compliance with the NERC Reliability Standards Development Procedure, the Standards Committee manages the NERC standards development process to achieve broad bulk power system reliability goals for the industry. The Standards Committee protects the integrity and credibility of the standards development process. NERC staff facilitation of the standards development process in coordination with the Standards Committee takes into consideration the potential impact on industry resources when planning standards related projects and activities. Specific comments in how this Reliability Standards Development Plan could be modified to more effectively use industry resources are welcome.

Comment 9

Name: Guy Zito

Organization: NPCC

Suggestion or Comment: The comments provided are to provide guidance for the 2009-2011 plan. We understand that a draft version has already been made, but is not yet available. The solicitation of comments should have been a precursor to its drafting, or should have been posted after its release to allow for comment on the document itself.

The following comments are on the 2008-2010 Work Plan and it is envisioned that the new work plan will address these.

In the Volume I Table of Contents the page number for Appendix A is incorrect (it is shown as page 1).

Volume I should be entitled Work Plan--remove the reference to schedule. Appendix A in Volume I have an overall "general" work plan for the projects. Move this general work schedule as a lead document to Volume II Project Descriptions for Long Range Plan, and then with each project include a detailed work plan that specifies dates for the drafting teams to achieve milestones. This will allow for more accurate and accountable project management.

Throughout the document Volume II is referred to as Appendix B. Suggest that the Appendix B designation be removed.

NERC Response:

Your suggestions have been incorporated into this 2008 revision to the Reliability Standards Development Plan.

Recommendation for improvement: Due to the ever increasing number of standards and projects and the aggressive schedule with which NERC has to address FERC comments, the RSC believes it is of vital importance that the individual drafting team develops, and adheres to the extent possible, milestones and goals and their associated deliverable dates. This will be of great benefit to the ever constrained resources of the industry and assist with the drafting efforts as well as make it easier and transparent to an organization if they want to participate in a drafting team effort.

It has proven very problematic to coordinate the development of Regional standards with the ERO standards if the drafting teams are allowed to work to their own schedules and not respect the timelines given or at least to develop their own schedules and publish them for the industry and update those schedules as issues such as voluminous comments to postings occur.

NERC Response:

NERC appreciates NPCC's comments relative to the development and adherence to milestones and goals to the extent possible. We are continually looking for ways to improve the accuracy of our projects schedules but due to the vast number of variables out of the direct control of NERC staff, it is very difficult to develop accurate project schedules. It is NERC's goal to develop quality standards in a timeframe that is responsive to industry needs. It is not the intent of NERC staff to drive standards development projects to meet a particular schedule unless there is a specific need to meet a specific deadline.

Comment 10

Name: Patricia Metro

Organization: NRECA

Suggestion or Comment: "Roles and Responsibilities: Standards Drafting Team Activities" guideline

Additional information: NRECA stresses the importance of completing the "Roles and Responsibilities: Standards Drafting Team Activities" guideline. Clearly defined roles and responsibilities for the Standards Committee, Standard Drafting Team Members, NERC Staff and Regulatory Staff will expedite the Standards Development Process enabling the completion of more projects included in the Standards Development Plan.

NERC Response:

NERC appreciates NRECA's comments relative to the importance of completing the "Roles and Responsibilities: Standards Drafting Team Activities" guideline. NERC staff is working to finalize the guidelines in coordination with industry and regulatory authority input.

Reliability Issue: # of projects and associated timelines

Suggestion or Comment: NRECA is concerned there is an unrealistic expectation that the projects included in the existing Standards Development Plan can be completed in the timeline provided for those projects. Because of this, it is imperative that the projects be prioritized with deadlines that are feasible for completion.

NERC Response:

NERC is continually looking for ways to improve the accuracy of our projects schedules but due to the vast number of variables out of the direct control of NERC staff, it is very difficult to develop accurate project schedules. It is NERC's goal to develop quality standards in a timeframe that is responsive to industry needs. It is not the intent of NERC staff to drive standards development projects to meet a particular schedule unless there is a specific need to meet a specific deadline. Specific comments in how this Reliability Standards Development Plan could be modified to more effectively use industry resources are welcome.

Comment 11

Name: Roman Carter

Organization: SOCO

Suggestion or Comment: 1. Work Plan Description (page 8) and Strategy for Project Resources (page 12): We agree that NERC's Plan should recognize the reality of limited staff and industry manpower resources available to complete the scheduled projects within the allotted time frame. The Plan suggests that NERC also recognizes the ongoing development of regional standards and the unexpected influx of interpretation requests from industry that have adversely impacted the deliverables in the plan and resulted in four projects being deferred to 2009. Based on the NERC Standards Under Development website, there are currently 37 projects under development, out for comment, or seeking interpretation. Given that industry utilizes a limited set of existing experienced personnel to comment on these projects and that these people have other job responsibilities critical to the reliability of the bulk power system, the time required to monitor standards development documentation, participate in standards

development meetings, and prepare comments on the standards puts a tremendous burden on the limited number of personnel that have the necessary expertise and on industry as a whole. While we concur with postponing work on four projects, we believe that further prioritization is required and that actions should be taken to bring the number of standards being developed at any given time in line with available NERC and industry personnel resources. It is not clear exactly how to balance manpower limitations against perceived critical reliability issues, but this balance must be maintained in order to ensure the quality and effectiveness of the reliability standards being developed.

2. Issues Related to the Applicability of a Standard (page 18): The 3-year plan should provide more guidance as to who can be held accountable for NERC standards. For example, in paragraph 3 of page 18, the Plan describes how a DP is held accountable even though they own and operate facilities in the local distribution of electrical energy. Since they perform functions affecting and essential to the reliability of the bulk power system, they are accountable for certain reliability standards. What about entities such as a Regional Entity who perform a function such as the IA. By registering as the IA, they coordinate the transfer power across the bulk power system. Can the Regional Entity be penalized for non-compliance even though they are not owners, users, or operators of the bulk power system?

3. Coordination with NAESB (page 25): The plan mentions that NERC coordinates the development of all standards with NAESB and the ISO/RTO Council through a memorandum of understanding and through the Joint Interface Committee (JIC). NERC no longer lists the JIC as a committee on their Website. Has this committee been dissolved and replaced with some other group to carry out this function?

NERC Response:

1) NERC appreciates the amount of industry resources necessary for the development of quality standards and is cognizant of the fact that industry resources are not limitless. NERC staff coordinates all standards development activities through the NERC Standards Committee whose membership consists of industry representatives. In compliance with the NERC Reliability Standards Development Procedure, the Standards Committee manages the NERC standards development process to achieve broad bulk power system reliability goals for the industry. The Standards Committee protects the integrity and credibility of the standards development process. NERC staff facilitation of the standards development process in coordination with the Standards Committee takes into consideration the potential impact on industry resources when planning standards related projects and activities. Specific comments in how this Reliability Standards Development Plan could be modified to more effectively use industry resources are welcome.

2) Each standard drafting team assigned to a project is charged to review, among other things, the applicability of the standards, and in particular each requirement of each of the standards associated with the project. In determining the applicability of each standard and the requirements within a standard, the drafting team should follow the definitions provided in the NERC Glossary of Terms Used in Reliability Standards and should also be guided by the Functional Model. With respect to your specific example of IA functionality, Project 2008-12 Coordinate Interchange Standards has been initiated to, among other things, revise the set of Coordinate Interchange standards to ensure that each requirement is assigned to an owner, operator, or user of the bulk power system, and not to a tool used to coordinate interchange.

3) Yes the NAESB Joint Interface Committee has been dissolved. The ISO/RTO council is recognized by both NERC and NAESB and therefore is able to offer its opinions and suggestions to both organizations.

Comment 12

Name: Terry Bilke

Organization: Midwest ISO

Suggestion or Comment:

We appreciate the effort that has gone into the development of the current standards and also the opportunity to comment. Our primary recommendations for the Standards Development Plan are to:

- Vet, clarify, and simplify definitions of VRFs and VSLs.
- Develop a standards database.
- Resolve incorrect functional model assignments from V0
- Implement a plan to simplify and clarify the standards.

Vet, clarify and simplify definitions of VRFs and VSLs

The Violation Risk Factor (VRF) definitions were never vetted through the stakeholder process and may not truly align with risk. The process used for the initial assignment of VRFs appears to reflect perceived importance more than a true assessment of risk. Drafting teams, who often have great personal investment in a standard, appear to be heavily weighting risk factors. As noted in the NERC *Reliability Criteria and Operating Limits Concepts* document, risk includes both probability and impact components. Accident theory notes the relationship between high-risk to medium-risk to low-risk events should follow a pyramid distribution. The actual distribution of assigned VRF looks more like an inverted pyramid as drafting teams, NERC staff, and then the FERC sequentially tend to escalate assigned VRFs. .

Violation Severity Levels (VSL) are another compliance element that did not go though a full industry vetting. There has been no process to assess the norms of performance and create the scales to apply the four levels (lower, moderate, high, severe). In addition, most requirements in the standards are attribute (yes-no) requirements. Is it appropriate to assume a "Severe" VSL for failure of any and all yes-no requirements?

Develop a Standards Database

We believe it is important for NERC to develop a database that is a mirror of and companion to the standards.

First, it is nearly impossible for a given entity to accurately identify every requirement and reference to that entity in the standards. There are requirements that give a specific functional entity a role, even though it is not identified as an applicable entity in the respective standard. Also, the sheer number of requirements means obligations will likely slip through the cracks.

Such a database would enable standards improvements. Comments could be easily captured on specific requirements (redundancy, ambiguity, informal and formal interpretations, etc.).

Resolve Incorrect Functional Model Assignments from V0

Planning Authority

There are over 100 references in the standards to the Planning Authority. Many requirements regarding this function are written as:

- the planning authority and the transmission planner will…
- the planning authority or the transmission planner will…

So either both the Planning Authority and the Transmission Planner are responsible for something or one or the other (not clear which) are responsible. This double / optional responsibility is not in line with accountability concepts.

The functional model has changed since the original V0 assignment of Planning Authority obligations. Just renaming the Planning Authority to Planning Coordinator in the standards as some have proposed will not fix the problem. The entities that are performing the closest thing to the Planning Authority function are the ISOs/RTOs, very large Transmission Operators, or the Regions where ISOs and RTOs

don't exist. Rather than asking these capstone entities to duplicate everything done by the local planner, the planning authority requirements should be restricted to wide-area coordinating functions. The fine-tuning of responsibilities in a given region or planning area can be identified via a joint-registration process.

Interchange Authority

We believe most of the Interchange Authority (IA) requirements should be retired. All of the requirements applicable to the IA (except CIP) were tagging process steps in Policy 3 that were converted to IA requirements in the V0 effort. There is not a common understanding of what the IA is. Since these are tagging process steps and tagging tools aren't users, owners, or operators, the requirements should be retired or moved to an informational document.

There is a current SAR on the INT standards. If this SAR corrects the IA problem, this suggestion could be removed from future versions of the plan.

Implement a Plan to Simplify and Clarify the Standards

Given the time available, the V0 process did a good job of converting the prior policies to the functional model. As part of the Version 0 effort, there was a conscious decision to include supporting information into the standard itself. At face value it is a good idea to have all this information all in one place. However, now there is a great deal of explanatory material in the standards that is formatted to appear as requirements. In reality, many of the "R"s used to label requirements in the V0 and subsequent standards are more precisely paragraph numbers than they are true requirements. We are now trying to figure out how to measure and apply risk to all the sentences that are really just supporting text. A simple example is the DCS. The true core requirement is to recover from all reportable events in 15 minutes. The rest of the Rs are an explanation of what that means, how it's handled in a Reserve Sharing Group and also the procedural reporting items. However, we are now moving down a path to assign measures and sanctions to 20 different things in this standard.

NERC and the industry should go through a process to identify those true core requirements that directly contribute to reliability.

NERC Response:

Vet, clarify, and simplify definitions of VRFs and VSLs.

The Process Subcommittee of the Standards Committee is currently addressing the issue you raise above relative to Violation Risk Factors (VRFs). With respect to Violation Severity Levels (VSLs), the Federal Energy Regulatory Commission (FERC) issued an order on June 19, 2008 relative to VSLs for which NERC has sought clarification and rehearing. Once FERC responds to NERC's request, a definitive plan will be developed relative to the issues you raise above regarding VSLs.

Develop a standards database.

NERC is working with a vendor to develop the database requested. The initial phase of this effort will focus on the database to support the compliance administration function and is anticipated to be completed by the end of 2008. The next phase of the effort will focus on the development of the user interface that will permit the user-guided content you suggest.

Resolve incorrect functional model assignments from V0

Each standard drafting team assigned to a project is charged to review, among other things, the applicability of the standards, and in particular each requirement of each of the standards associated with the project. In determining the applicability of each standard and the requirements within a standard, the drafting team should follow the definitions provided in the NERC Glossary of Terms Used in Reliability Standards and should also be guided by the Functional Model. As each standard with applicability to Planning Authority is revised, we encourage you to participate in the development of such standards to help elevate the problem articulated above. In addition, version 5 of the Functional Model is working on addressing the very issues you raise above relative to the Planning Authority.

With regard to comments related to the Interchange Authority, the SAR you refer to relates to Project 2008-12 Coordinate Interchange Standards. Project 2008-12 Coordinate Interchange Standards has been initiated to, among other things, revise the set of Coordinate Interchange standards to ensure that each requirement is assigned to an owner, operator or user of the bulk power system, and not to a tool used to coordinate interchange.

Implement a plan to simplify and clarify the standards.

The intent of this Reliability Standards Development Plan is to do just that, simplify and clarify standards. NERC does not write standards independent of industry participation. In the end it is the industry that actually ballots and approves reliability standards. NERC encourages and welcomes industry participation in the development of standards to achieve the simplification and clarification of each and every standard as you suggest. In the course of implementing the projects in this standards development plan, every NERC standard will be open to review at some point in time. As such, every standard and requirement will receive the attention you suggest in your comments above.

Comment 13

Name: Ed Skiba

Organization: NAESB Wholesale Electric Quadrant (WEQ) Standards Review Subcommittee

Project Number(s): 2006-07, 2006-08, 2007-05, 2007-18, 2008-01, 2008-03, 2009-02, 2009-03

Project Title(s): Transfer Capabilities, Transmission Loading Relief, Balancing Authority Controls, Reliability Based Control, Voltage and Reactive Control, Emergency Operations, Connecting New Facilities to the Grid, Interchange Information.

Suggestion or Comment:

The NAESB Wholesale Electric Quadrant Standards Review Subcommittee (SRS) commends the NERC staff and industry contributors that put many hours of work into the development and revision of the Reliability Standards Development Plan: 2008-2010. Such efforts are greatly appreciated, and are key to guiding the work necessary in enhancing and ensuring the reliability of the bulk electric system.

The SRS conducted an analysis of the work plan in order to identify those projects contained in the NERC Reliability Standards Development Plan that may be appropriate for the industry, through NAESB, to develop parallel and complementary business practices.

Each project contained in the NERC Reliability Standards Development Plan 2008-2010, Volume II, was reviewed for potential NAESB input and development. Below are the NERC projects that may be appropriate for the development of NAESB business practices.

Project 2006-07: Transfer Capabilities

Related NAESB WEQ Projects:
Annual Plan Item 2.a
Annual Plan Item 2.b
Annual Plan Item 2.c

Justification for NAESB consideration:
FERC Order 890
Industry recommendations

SRS Recommendation:

No further SRS action required. This project is already covered by current NAESB WEQ projects. Coordination between NERC & NAESB is in progress.

Project 2006-08: Transmission Loading Relief

Related NAESB WEQ Projects:
Annual Plan Item 1.a.ii
Annual Plan Item 1.d
Annual Plan Item 2.b.vi

Justification for NAESB consideration:
FERC Order 890

SRS Recommendation:
This project is already covered by current NAESB WEQ projects. NERC should take into consideration WEQ Annual Plan Item 1.d in the development of the NERC Standard. Coordination between NERC and NAESB is in progress.

Project 2007-05: Balancing Authority Controls

Related NAESB WEQ Projects:
Annual Plan Item 1
Annual Plan Item 6.b
Provisional Item 5

Justification for NAESB consideration:
FERC Order 693
Project Description

SRS Recommendation:
During initial discussions (REF: Rae McQuade's letter to Gerry Adamski dated February 11, 2008), there was no identified need for business practices related to this project. NERC should point out any areas where they see a need for a business practice. This should be coordinated with the WEQ on current project Annual Plan Item 6.b.

Project 2007-18: Reliability Based Control

Related NAESB WEQ Projects:
Annual Plan Item 1

Justification for NAESB consideration:
WEQ SRS analysis

SRS Recommendation:
The WEQ SRS has referred this to the JISWG for consideration.

Project 2008-01: Voltage and Reactive Control

Related NAESB WEQ Projects:
Annual Plan Item 1

Justification for NAESB consideration:
Industry recommendations

SRS Recommendation:
This project may need NAESB attention in the future. The WEQ SRS will place this on its watch list. The SRS wishes to know if this is still an active NERC project, as it is not included on their Standards under Development list.

Project 2008-03: Emergency Operations

Related NAESB WEQ Projects:
Annual Plan Item 1

Justification for NAESB consideration:
WEQ SRS analysis
Industry recommendations

SRS recommendation:
See project 2007-18 above

Project 2009-02: Connecting New Facilities to the Grid

Related NAESB WEQ Projects:
Annual Plan Item 1

Justification for NAESB consideration:
Industry recommendations

SRS Recommendation:
The WEQ SRS will add this project to its watch list.

Project 2009-03: Interchange Information

Related NAESB WEQ Projects:
Annual Plan Item 1
Annual Plan Item 3

Justification for NAESB consideration:
Industry recommendations

SRS Recommendation:
The WEQ SRS will coordinate with the JISWG on this project.

NERC Response:

Your suggestions have been incorporated into this revision to the Reliability Standards Development Plan.

Suggestion or Comment:

Project: Better align definitions and terms between NERC & NAESB.

SRS Recommendation:

NAESB should coordinate with NERC in aligning terms and definitions between the two organizations.

Again, the SRS commends the NERC staff and industry contributors for their efforts in compiling a comprehensive work plan. We believe that the suggestions we have provided above will enhance the good work that has already been done, and help to ensure the security and reliability of the bulk electric

system.

NERC Response:

NERC staff has reviewed the terms used by both NERC and NAESB and agree the terms should be "consistent" (not necessarily "identical"). The following standard drafting teams will be asked to review the indicated terms and change as needed as part of their assignment:

Project 2006-07 Transfer Capabilities (ATC/TTC/CBM/TRM):

- Firm Transmission Service
- Network Integration Transmission Service
- Non-Firm Transmission Service
- Open Access Same-time Information System
- Point-to-Point Transmission Service
- Transmission Customer

Project 2006-08 Transmission Loading Relief:

- Reallocation

Project 2007-05 Balancing Authority Controls:

- Frequency Bias Setting
- Time Error
- Time Error Correction

Project 2008-12 Coordinate Interchange Standards:

- Interchange Schedule
- Interchange Transaction
- Interchange Transaction Tag (Tag)
- Request for Interchange
- Source BA
- Sink BA

Comment 14

Name: Larry Kezele

Organization: NERC Real-time Tools Best Practices Task Force

Suggestion or Comment:

See Attachment 1 to this Appendix A for a summary of the Real-time Tools Best Practices Task Report recommendations for new or revisions to existing reliability standards. The task force report is available at http://www.nerc.com/filez/rtbptf.html.

NERC Response:

Because of your suggestion, a new project (2009-02 Real-time Tools) has been added to this revision of

the Reliability Standards Development Plan to implement certain recommendations of the RTBPTF's identified in their report titled *Real-Time Tools Survey Analysis and Recommendations* dated March 13, 2008.

Comment 15

Name: Suzanna Strangmeier, on behalf of the Standards Interface Subcommittee (SIS)

Organization: NERC Compliance Element Drafting Resource Pool

Standard Number(s): PER-004-2

Standard Title(s): Reliability Coordination -- Staffing

Element(s) (i.e., Requirement R1.2., Measure M2., etc.): R1. and its VSLs, R2. and its VSLs

Suggestion or Comment: R1. Comments:

This requirement (staffed by trained and certified operators 24/7) – this requirement is currently set up as a binary requirement.

The issue with this requirement is that it is possible that an operator may be certified but has not met all of his/her training requirements for a given period of time (proposed PER-005 R3), or not have a training program in place that meets training program requirements (proposed PER-005 R1 - systematic approach).

This CEDRP believes that this requirement is in need of further clarification from a compliance perspective to address the "trained" issue; in addition how is a violation is determined and counted? (E.g. is one hour without a certified operator that same as one shift? If a shift crosses a day's boundary (1800 to 0600) is that a single violation or two violations of this requirement). The CEDRP believes as currently written this requirement will be subject to multiple regional entity interpretations.

R2. Comments:

As currently written the CEDRP does not believe that this requirement is measurable, an objective VSL cannot be written.

Recommendation for improvement: R1. VSL Comments

CEDRP Proposed Lower VSL:The position has been staffed with a NERC Certified operator with 29 hours and less than 32 hours of emergency operation training over the last 12 months.

CEDRP Proposed Moderate VSL: The position has been staffed with a NERC Certified operator with 26 hours and less than 29 hours of emergency operation training over the last 12 months.

CEDRP Proposed High VSL:The position has been staffed with a NERC Certified operator with 22 hours and less than 26 hours of emergency operation training over the last 12 months.

CEDRP Proposed Severe VSL:The position has been staffed with a NERC Certified operator with 22 hours and less than 26 hours of emergency operation training over the last 12 months.

OR

The responsible entity has failed to be staffed with adequately trained and NERC-certified Reliability Coordinator operators, 24 hours per day, seven days per week.

R2. VSL Comments

As currently written the CEDRP does not believe that this requirement is measurable, an objective VSL cannot be written for Lower, Moderate, High, or Severe VSLs.

Reliability Issue: ensuring adequate staffing of trained and certified personnel for real-time operations

Suggestion or Comment: or R1., clarification on two items 1) the meaning of training versus certification, since an individual may be certified yet not have completed training for a given timeframe, and 2) to identify what constitutes violation timeframes, one hour versus a shift, and the boundaries of the timeframes where real-time shifts may include a spread over two days (1800-0600).

Recommendation for improvement: Provide additional, concrete language (numbers, or other qualifications) to clarify the meaning behind the general around-the-clock operations with respect to variations between staffing schedules hours/shifts, and the information needed to know how to identify clearly a violation.

Project Number(s): Project 2006-01, however, it will fall under Project 2006-06

Project Title(s): System Personnel Training, but will fall under Reliability Coordination

Suggestion or Comment: Some form of R1 is needed, and if R2 is deleted through modifications (additions or retirements) to this and related standards, this standard should be OK.

NERC Response:

Thank you for your comments. Similar comments were submitted to the drafting team for Project 2006-01 System Personnel Training and were addressed as part of the standards development process for that project.

Comment 16

Name: Patrick Brown

Organization: PJM Interconnection

Reliability Issue: Reliability Standards Development Plan 2009-2011

Suggestion or Comment: PJM commends the NERC staff and industry contributors that put many hours of work into the development of the Reliability Standards Development Plan: 2009-2011. Such efforts are greatly appreciated, and are key to guiding the work necessary in enhancing and ensuring the reliability of the bulk electric system.

Although PJM continues to have concerns regarding the overall number of projects contained in the Reliability Standards Development Plan, as well as the expanded scope of work within each project, we believe that the additional realignment of projects between years will help ensure that those projects having the greatest impact on reliability in the near-term will be given a higher priority. We continue to caution that, as part of the standards development process, we must continue to be sensitive to the resources required, and available, to successfully complete these projects.

PJM continues to fully support NERC's coordination with NAESB. PJM believes that NERC's inclusion of the NAESB Wholesale Electric Quadrant Standards Review Subcommittee's recommendations in the NERC Standards Development Plan will serve to better coordinate the efforts between the two organizations.

Again, PJM commends the NERC staff and industry contributors for their efforts in compiling a comprehensive work plan. We believe that the Plan in its current form will continue to enhance the good work that has already been done, and help to ensure the security and reliability of the bulk electric system.

NERC Response:

Thank you for your kind comments. It is essential for NERC and the industry to work closely together to develop reliability standards that will provide an adequate level of reliability for the North American bulk power system.

Comment 17

Name: Terry Bilke

Organization: Midwest ISO

Reliability Issue: Reliability Standards Development Plan 2009-2011

Suggestion or Comment: We appreciate all the work that has gone into the development plan. Please see Comment 12 in Appendix A of the current development plan. We believe these recommendations are critical to provide clearer standards that will let entities focus on what is important to reliability. We would offer one additional suggestion. It would be helpful if NERC could quantify and keep track of the standards effort in the following categories: 1. Originally forecasted projects, 2. New industry-requested standards and projects, and 3. Regulatory directed initiatives and re-work of filed standards. We believe this is important information to better forecast required resources for future development plans and the budgets to support them.

NERC Response:

Thank you for the constructive comments and recommendations. Comment 12 is addressed separately above. With respect to your recommendations regarding the tracking of the many standards development projects, we are always seeking better ways to communicate the progress of standards projects with industry and we will keep your recommendations in mind going forward.

Comment 18

Name: Jack Cashin/Barry Green

Organization: EPSA

Reliability Issue: Reliability Standards Development Plan 2009-2011

Suggestion or Comment: The Development Plan should also include a review of the applicability of the TO and TOP standards to Generators, where particular generators have a radial line that extends from their plant to a bulk electric system substation and have been asked by their respective Regional Entity to register their radial transmission for the TO/TOP function. Not only is review needed to create an applicable subset of TO/TOP standards when this situation surfaces, but then that subset of TO/TOP standards needs to be-written so that compliance obligations for a generation entity are clear and compliance is measurable.

Recommendation for improvement: The review of the applicability of the TO and TOP standards should include the following:

i) Articulation of the reliability gaps that may exist if applicable generators do not comply with the TO and TOP standards.

ii) If a gap is identified, determination of the applicability of the TO/TOP standards to generators including a review of any necessary modifications, additions or deletions of the TO and TOP standards such that they are appropriate for application to generators. In addition, there should also be consideration given to modifying the existing GO and GOP standards (as opposed to mapping the full set of TO and TOP standards to generators) such that the gaps can be addressed.

iii) Necessary changes to the standards implemented through the Reliability Standards Consensus Development Process.

Reliability Issue: To date, the specific reliability issue has not been well defined. A very small number of generators have been registered by their Regional Entities as TO and TOPs yet a generic reliability concern does not seem to have been specifically articulated. Rather a case by case approach has been adopted. "Our decision to affirm the registration decision of WECC and NERC is not a finding that all tie-line owners and operators should be registered as transmission owners and operators . . . . [United States of America Federal Energy Regulatory Commission, New Harquahala Generating Company, LLC Docket No. RC08-4-000 Order Denying Appeal of Electric Reliability Organization Compliance Registry Determination].

Suggestion or Comment: There is a need to clarify the reliability concern and then ensure that necessary standards are in place to address those concerns where they are present.

Recommendation for improvement: see recommendation in Section 2

NERC Response:

NERC has not yet identified a long-term solution to the interface issue between generators and the transmission grid. We will be collecting industry input to the issues surrounding this topic through a survey process that will be undertaken by the end of September. The information from this survey will be collated and a course of action to fully address this issue will be determined.

Real-time Tools Best Practices Task Force
Recommendations for New Reliability Standards or Revising to Existing Reliability Standards

August 7, 2008

RTBPTF Recommendation	RTBPTF Report Section/Page	Standard	Title	Requirement	Purpose
S1 – Alarm Tools	2.1/13-14	TOP-006	Monitoring System Conditions	New	Alarm Tool Availability
S1 – Telemetry Data Systems	1.1/29-33	TOP-005	Operational Reliability Information	Revise Appendix	Data Required to Support Operational Analysis
S1 – Telemetry Data Systems	1.1/33-35	IRO-002	Reliability Coordination – Facilities	New	Identify which BPS Elements to Telemeter
S1 – Telemetry Data Systems	1.1/35-39	IRO-005	Reliability Coordination – Current Day Operations	Revise R1 to include measurements	
S1 – Telemetry Data Systems	1.1/39-40	PRC-001	System Protection Coordination	Revise R6	Clarify Use of term “Monitor”
S1 – Telemetry Data Systems	1.1/40-44	TOP-006	Monitoring System Conditions	Revise TOP-006 to include measurements	
S1 – Telemetry	1.1/44-45	VAR-001	Voltage and	Revise VAR-	

RTBPTF Recommendation	RTBPTF Report Section/Page	Standard	Title	Requirement	Purpose
Data Systems			Reactive Control	001 to include measurements	
S1 – Telemetry Data Systems	1.1/45-46	COM-001	Telecommunications	New	Knowledge of Status of Telemetry Systems
S1 – Network Topology Processor	2.3/68-69	IRO-002	Reliability Coordination – Facilities	Revise R7	Require use of Network Topology Processor
S1 – State Estimator	2.5/104-107	IRO-002	Reliability Coordination – Facilities	Revise R7	Require use of State Estimator
S1 – Contingency Analysis	2.6/137-138	IRO-002	Reliability Coordination – Facilities	Revise R7	Require use of Contingency Analysis
S2 – List of BPS Elements	1.1/33-35	IRO-002	Reliability Coordination – Facilities	New	Identify which BPS Elements to Telemeter
S3 – RC Monitoring of BPS	1.1/35-39	IRO-005	Reliability Coordination – Current Day Operations	Revise R1	Include Measurements
S4 – Data Exchange Standards	1.2/57-59	TOP-005	Operational Reliability Information	New	Facilitate Power System Model Change Management

RTBPTF Recommendation	RTBPTF Report Section/Page	Standard	Title	Requirement	Purpose
S5 – Data Availability Standards	1.2/60-62	TOP-005	Operational Reliability Information	New	Facilitate Data Availability, System Maintenance, and System Redundancy
S6 – Weather Data	1.3/69-70	TOP-005	Operational Reliability Information	New	Weather Data for Situation Awareness
S7 – Alarm Tools Availability	2.1/13-14	TOP-006	Monitoring System Conditions	New	Alarm Tool Availability
S8 – Network Topology Processor Availability	2.3/69-70	TOP-006	Monitoring System Conditions	New	Network Topology Processor Availability
S8 – Network Topology Processor Availability	2.3/70-72	IRO-005	Reliability Coordination – Current Day Operations	Revise R1.1	Data processing to determine current network topology
S9 – Determining Wide-Area View Boundary	2.2/38-40	IRO-003	Reliability Coordination – Wide-Area View	New	Develop Uniform Process to Identifying a RCs wild-area boundary
S9 – Determining Wide-Area View Boundary	2.2/42-44	IRO-003	Reliability Coordination – Wide-Area View	R1 and R2	Include Measurements
S10 – Verify Use	2.2/44-45	IRO-002	Reliability	R7	Include Measurements

RTBPTF Recommendation	RTBPTF Report Section/Page	Standard	Title	Requirement	Purpose
of Wide-Area Visualization Tools			Coordination – Facilities		
S10 – Verify Use of Wide-Area Visualization Tools	2.2/45-51	IRO-005	Reliability Coordination – Current Day Operations	R1	Include Measurements
S10 – Verify Use of Wide-Area Visualization Tools	2.2/51-52	TOP-006	Monitoring System Conditions	R2	Include Measurements
S11 – State Estimator Availability	2.5/107-109	TOP-006	Monitoring System Conditions	New	State Estimator Availability
S11 – State Estimator Availability	2.5/109-110	TOP-006	Monitoring System Conditions	New	State Estimator Solution Quality
S12 – Contingency Analysis Availability	2.6/138-140	TOP-006	Monitoring System Conditions	New	Contingency Analysis Availability
S12 – Contingency Analysis Availability	2.6/140-141	TOP-006	Monitoring System Conditions	New	Contingency Analysis Solution Quality
S13 – Defining Contingencies	2.6/141-144	TOP-006	Monitoring System Conditions	New	Defining Contingencies

RTBPTF Recommendation	RTBPTF Report Section/Page	Standard	Title	Requirement	Purpose
S14 – Perform Power Flow Analysis	2.8/157-159	TOP-002	Normal Operations Planning	New	Require Hour-Ahead Power Flow Analysis
S14 – Perform Power Flow Analysis	2.8/157-159	IRO-004	Reliability Coordination – Operations Planning	New	Require Hour-Ahead Power Flow Analysis
S15 – Real-time Awareness of Load Shed Capability	2.13/185-186	IRO-005	Reliability Coordination – Current Day Operations	New	RC Awareness of Load Shed Capability
S16 – Monitor Contingency Reserves	3.1/13-14	BAL-002	Disturbance Control Performance	New	Calculation and Monitoring of Contingency Reserves
S17 – Monitor Operating and Reactive Reserves	3.1/14-15	BAL-005	Automatic Generation Control	New	Calculation and Monitoring of Operating and Reactive Reserves
S18 – Conservative Operations	3.3/25-26	TOP-001	Reliability Responsibilities and Authorities	New	Conservative Operations Plans and Procedures
S19 – Unknown Operating State	3.3/26-27	TOP-004	Transmission Operations	New	Address Operating in an Unknown Operating State
S20 – Operating	3.4/36-43	IRO and TOP		Coordination	Development of Operating

RTBPTF Recommendation	RTBPTF Report Section/Page	Standard	Title	Requirement	Purpose
Guides		Standards		and Clarification of Requirements	Guides
S21 – Operating Guides	3.4/36-43	IRO and TOP Standards		New	Review of Operating Guides
S22 – Operating Guides	3.4/36-43	IRO and TOP Standards		New	Temporary Operating Guides
S23 – Operating Guides	3.4/36-43	IRO and TOP Standards		New	Joint Operating Guides
S24 – Operating Guides	3.4/36-43	IRO and TOP Standards		New	Creating/Modifying Operating Guides
S25 – Operating Guides	3.4/36-43	IRO and TOP Standards		New	Creating/Modifying Operating Guides
S26 – Operating Guides	3.4/36-43	IRO and TOP Standards		New	Creating/Modifying Operating Guides
S27 – Operating Guides	3.4/36-43	IRO and TOP Standards		New	Purpose of Operating Guides
S28 – Operating Guides	3.4/36-43	IRO and TOP Standards		New	Assessment of Operating Guides
S29 – Operating Guides	3.4/36-43	IRO and TOP Standards		New	Identification of Control Actions within Operating Guides

RTBPTF Recommendation	RTBPTF Report Section/Page	Standard	Title	Requirement	Purpose
S30 – Operating Guides	3.4/36-43	IRO and TOP Standards		New	Criteria within Operating Guides to Support Operating Decisions
S31 – Operating Guides	3.4/36-43	IRO and TOP Standards		New	On-line Tools to Support Implementation of Operating Guides
S32 – Operating Guides	3.4/36-43	IRO and TOP Standards		New	Operator Accessibility to Operating Guides
S33 – Load Shed Capability	3.5/48-51	EOP-003	Load Shedding Plans	New	Operator Awareness of Real-time Load Shed Capability
S34 – BPS Reassessment and Re-posturing	3.6/55-57	TOP-004	Transmission Operations	New	Establish Procedures for Reassessing the BPS Following a Contingency
S34 – BPS Reassessment and Re-posturing	3.6/55-57	IRO-005	Reliability Coordination – Current Day Operations	New	Establish Procedures for Reassessing the BPS Following a Contingency
S35 – Operator Awareness of Blackstart Plans	3.7/63-64	EOP-005	System Restoration Plans	New	Operator Awareness of Availability Blackstart Resources
S36 – Coordination of Outages of Blackstart Plan	3.7/65	TOP-003	Planned Outage Coordination	New	Scheduled Outages of Blackstart Generation Resources and/or Transmission Restoration Paths

RTBPTF Recommendation	RTBPTF Report Section/Page	Standard	Title	Requirement	Purpose
Facilities					
S37 – Critical Equipment Monitoring	5.2/14-16	IRO-005	Reliability Coordination – Current Day Operations	New	Maintain a Critical Equipment Monitoring Document
S38- Critical Equipment	5.2/16	IRO-005	Reliability Coordination – Current Day Operations	New	Critical Equipment Status Event Logs
S39- Critical Equipment	5.2/17-18	IRO-005	Reliability Coordination – Current Day Operations	New	Critical Equipment Maintenance and Testing Document
S40- Critical Equipment	5.3/23-27	IRO-005	Reliability Coordination – Current Day Operations	New	Awareness of Critical Equipment Status

NERC

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Reliability Standards Development Plan: 2009–2011

Volume II
List of Projects
September 22, 2008

to ensure the reliability of the bulk power system

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Table of Contents:

Introduction

There are 39 projects in this plan. For each project, a description is provided that outlines the general overview and scope of improvements to be considered in conjunction with the project.

Each project description includes a cover page that provides an overview of the project, including the project number, title, list of affected reliability standards, hyperlinks to associated portions of the NERC standards web pages, and a brief description of the project. The cover page is followed by a list of "Issues to be Considered by Drafting Team" for each reliability standard associated with the specific project.

The standard drafting team for each of these projects will be expected to review the assigned standards and modify the standards to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure as described in the "Global Improvements" section of Volume I of this *Reliability Standards Development Plan*.

Each list of "Issues to be Considered by Drafting Team" identifies the FERC directives from Orders 693, 890, and 706 and also includes comments provided by:

- The team working on identifying the "fill-in-the-blank" characteristics of the NERC reliability standards,
- Industry stakeholders,
- NAESB Wholesale Electric Quadrant (WEQ) Standards Review Subcommittee (SRS),
- Version 0, Phase III & IV, Violation Risk Factors (VRFs), and Missing Measures and Compliance Elements drafting teams and others as noted.

The majority of comments provided by these entities can be found in the following references:

- FERC Order 693 Mandatory Reliability Standards for the Bulk-Power System
- FERC Order 693 — A, Order on Rehearing
- FERC Order 706 Mandatory Reliability Standards for Critical Infrastructure Protection
- FERC Order 706-A Mandatory Reliability Standards for Critical Infrastructure Protection
- FERC Order 890 Preventing Undue Discrimination and Preference in Transmission Service
- FERC NOPR Mandatory Reliability Standards for Critical Infrastructure Protection
- FERC NOPR — Mandatory Reliability Standards for the Bulk-Power System, dated October 20, 2006 — *Explanatory comments from NERC staff's discussion with FERC personnel on the NOPR are indicated in italic text contained within parenthesis*
- Summary of Comments for Addressing Fill-in-the-Blank Aspects of Reliability Standards, October 24, 2006
- Comments received during the development of Version 0 reliability standards
- Consideration of comments of the Missing Compliance Elements drafting team.
- Consideration of comments of the Violation Risk Factors drafting team
- Consideration of comments in the Phase III-IV standards
- SAR on Planning Authority (The requester agreed to not proceed with this SAR.) SAR on Applicability

Note that no value judgments have been made about the technical merits of any of the items included in each list of "Issues to be Considered by Drafting Team." Each standard drafting team for the specific project is expected to further investigate and properly address each of the issues listed.

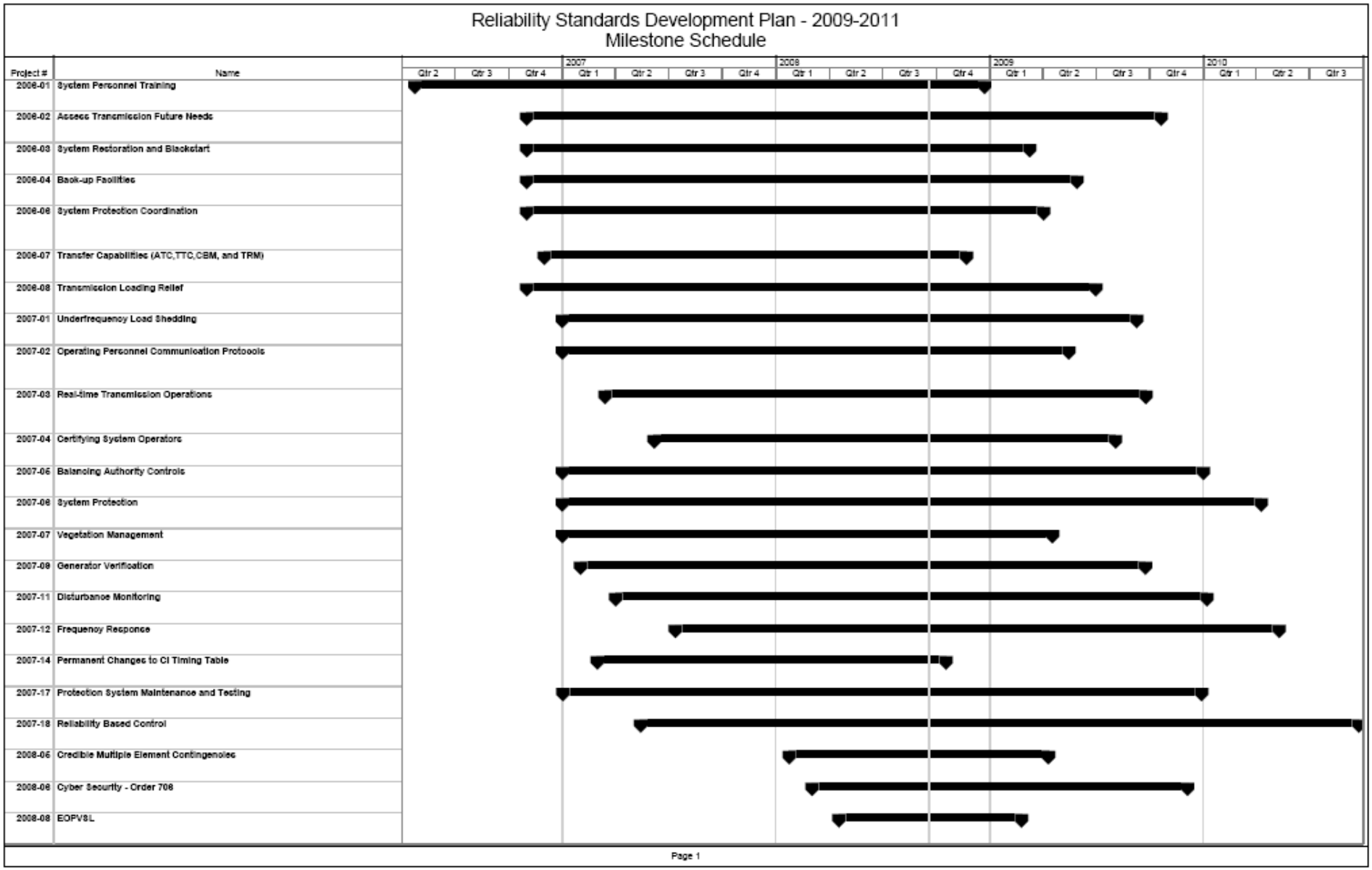
Also please note that the NERC Standards staff had previously met with FERC staff to discuss the October 20, 2006 FERC NOPR on Mandatory Reliability Standards for the Bulk-Power System in Docket No. RM06-16-000 — and drew the following conclusions from that discussion:

- The location of a requirement (which standard includes the recommended requirement) is not a concern — so if a requirement is recommended as an addition to one standard, but is actually added to another standard, that should be acceptable to FERC.
- When the term 'performance metrics' is used, it can mean a measure of bulk power system performance, functional entity performance, or performance of a person in a position or a combination of all of these metrics.
- FERC does not have a set of proposed definitions for terms such as 'emergency' or 'critical facilities' and is relying on the drafting teams to develop and refine these terms, where needed, through the stakeholder consensus process.
- Where testing periodicity is proposed, the intent is to have a requirement that includes a technically sound minimum testing interval.
- Where the intent of a proposed requirement can be accomplished by an alternate requirement, the alternate requirement should be acceptable to FERC. For example, proposals to add requirements for 'facilities,' can be met with requirements that specify that entities have the 'capabilities' of those facilities.

The three charts and tables on the pages which immediately follow have been provided as additional information for helping better understand each project:

- The first chart provided is an overall gantt chart for all currently open projects. More detailed project schedules are posted on the "Related Files" of each project. The intent of this overall gantt chart is top provide a quick reference of the overall project schedule for each project.
- The next table is provided as a quick reference identifying which project is associated with a particular standard and is sorted by standard number.
- The final table is provided as a quick reference identifying which standards are associated with each project and is sorted by project number.

Reliability Standards Development Plan Overall Project Schedules



Reference Identifying the Standard in each Project Sorted by Standard Number

Standard	Standard Name	Project Number
Resource and Demand Balancing (BAL) Standards		
BAL-001-0	Real Power Balancing Control Performance	Project 2007-18
BAL-001-0a	Real Power Balancing Control Performance	Project 2007-18
BAL-002-0	Disturbance Control Performance	Project 2007-05 and Project 2009-02
BAL-003-0	Frequency Response and Bias	Project 2007-18
BAL-003-0a	Frequency Response and Bias	Project 2007-18
BAL-004-0	Time Error Correction	Project 2007-05
BAL-004-1	Time Error Correction	Project 2007-05
BAL-005-0	Automatic Generation Control	Project 2007-05 and Project 2009-02
BAL-005-0b	Automatic Generation Control	Project 2007-05 and Project 2009-02
BAL-006-1	Inadvertent Interchange	Project 2007-05
Critical Infrastructure Protection (CIP) Standards		
CIP-001-1	Sabotage Reporting	Project 2009-01
CIP–002–1	Critical Cyber Asset Identification	Project 2008-06
CIP–003–1	Security Management Controls	Project 2008-06
CIP–004–1	Personnel and Training	Project 2008-06
CIP–005–1	Electronic Security Perimeter(s)	Project 2008-06
CIP-006-1	Physical Security	Project 2008-06
CIP-006-1a	Cyber Security — Physical Security	Project 2008-06
CIP–007–1	Systems Security Management	Project 2008-06
CIP–008–1	Incident Reporting and Response Planning	Project 2008-06
CIP–009–1	Recovery Plans for Critical Cyber Assets	Project 2008-06
Communications (COM) Standards		
COM-001-1	Telecommunications	Project 2006-06 and Project 2009-02
COM-002-2	Communications and Coordination	Project 2006-06 and Project 2007-02
Emergency Preparedness and Operations (EOP) Standards		
EOP-001-0	Emergency Operations Planning	Project 2008-08 and Project 2009-03
EOP-002-2	Capacity and Energy Emergencies	Project 2007-18 and Project 2008-08 and Project 2009-03
EOP-003-1	Load Shedding Plans	Project 2008-08 and Project 2009-02 and Project 2009-03

Standard	Standard Name	Project Number
EOP-004-1	Disturbance Reporting	Project 2008-08 and Project 2009-01
EOP-005-1	System Restoration Plans	Project 2006-03 and Project 2008-08 and Project 2009-02
EOP-006-1	Reliability Coordination — System Restoration	Project 2006-03 and Project 2008-08
EOP-007-0	Establish, Maintain, and Document a Regional Blackstart Capability Plan	Project 2006-03
EOP-008-0	Plans for Loss of Control Center Functionality	Project 2006-04 and Project 2008-08
EOP-009-0	Documentation of Blackstart Generating Unit Test Results	Project 2006-03 and Project 2008-08
Facilities Design, Connections, and Maintenance (FAC) Standards		
FAC-001-0	Facility Connection Requirements	Project 2010-02
FAC-002-0	Coordination of Plans for New Facilities	Project 2010-02
FAC-003-1	Transmission Vegetation Management Program	Project 2007-07
FAC-008-1	Facility Ratings Methodology	Project 2006-09
FAC-009-1	Establish and Communicate Facility Ratings	Project 2006-09
FAC-010-2	System Operating Limits Methodology for the Planning Horizon	Project 2008-04
FAC-011-1	System Operating Limits Methodology for the Operations Horizon	Project 2008-05
FAC-011-2	System Operating Limits Methodology for the Operations Horizon	Project 2008-05 Project 2008-04
FAC-012-1	Transfer Capability Methodology	Project 2006-07
FAC-013-1	Establish and Communicate Transfer Capabilities	Project 2006-07
FAC-014-2	Establish and Communicate System Operating Limits	Project 2008-04
Interchange Scheduling and Coordination (INT) Standards		
INT-001-3	Interchange Information	Project 2008-12
INT-003-2	Interchange Transaction Implementation	Project 2008-12
INT-004-1	Dynamic Interchange Transaction Modifications	Project 2008-12
INT-005-1	Interchange Authority Distributes Arranged Interchange	Project 2007-14 and Project 2010-03
INT-005-2	Interchange Authority Distributes Arranged Interchange	Project 2007-14 and Project 2008-12
INT-006-2	Response to Interchange Authority	Project 2007-14 and Project 2008-12
INT-007-1	Interchange Confirmation	Project 2008-12
INT-008-1	Interchange Authority Distributes Status	Project 2007-14 Project 2008-12

Standard	Standard Name	Project Number
INT-008-2	Interchange Authority Distributes Status	Project 2007-14 and Project 2008-12
INT-009-1	Implementation of Interchange	Project 2008-12
INT-010-1	Interchange Coordination Exemptions	Project 2008-12
Interconnection Reliability Operations and Coordination (IRO) Standards		
IRO-001-1	Reliability Coordination — Responsibilities and Authorities	Project 2006-06 and Project 2009-03
IRO-002-1	Reliability Coordination — Facilities	Project 2006-06 and Project 2009-02
IRO-003-2	Reliability Coordination — Wide-Area View	Project 2009-02
IRO-004-1	Reliability Coordination — Operations Planning	Project 2009-02
IRO-005-2	Reliability Coordination — Current-Day Operations	Project 2006-06 and Project 2007-18 and Project 2009-02
IRO-006-3	Reliability Coordination — Transmission Loading Relief	Project 2006-08
IRO-006-4	Reliability Coordination — Transmission Loading Relief	Project 2006-08
IRO-014-1	Procedures, Processes, or Plans to Support Coordination Between Reliability Coordinators	Project 2006-06
IRO-015-1	Notifications and Information Exchange Between Reliability Coordinators	Project 2006-06
IRO-016-1	Coordination of Real-time Activities Between Reliability Coordinators	Project 2006-06
Modeling, Data, and Analysis (MOD) Standards		
MOD-001-0	Documentation of TTC and ATC Calculation Methodologies	Project 2006-07
MOD-002-0	Review of TTC and ATC Calculations and Results	Project 2006-07
MOD-003-0	Procedure for Input on TTC and ATC Methodologies and Values	Project 2006-07
MOD-004-0	Documentation of Regional CBM Methodologies	Project 2006-07
MOD-005-0	Procedure for Verifying CBM Values	Project 2006-07
MOD-006-0	Procedure for the Use of CBM Values	Project 2006-07
MOD-007-0	Documentation of the Use of CBM	Project 2006-07
MOD-008-0	Documentation and Content of Each Regional TRM Methodology	Project 2006-07
MOD-009-0	Procedure for Verifying TRM Values	Project 2006-07
MOD-010-0	Steady-State Data for Transmission System Modeling and Simulation	Project 2010-03
MOD-011-0	Regional Steady-State Data Requirements and Reporting Procedures	Project 2010-03
MOD-012-0	Dynamics Data for Transmission System Modeling and Simulation	Project 2010-03

Standard	Standard Name	Project Number
MOD-013-1	RRO Dynamics Data Requirements and Reporting Procedures	Project 2010-03
MOD-014-0	Development of Interconnection-Specific Steady State System Models	Project 2010-03
MOD-015-0	Development of Interconnection-Specific Dynamics System Models	Project 2010-03
MOD-016-1	Actual and Forecast Demands, Net Energy for Load, Controllable DSM	Project 2010-04
MOD-017-0	Aggregated Actual and Forecast Demands and Net Energy for Load	Project 2010-04
MOD-018-0	Reports of Actual and Forecast Demand Data	Project 2010-04
MOD 019-0	Forecasts of Interruptible Demands and DCLM Data	Project 2010-04
MOD-020-0	Providing Interruptible Demands and DCLM Data	Project 2010-04
MOD-021-0	Accounting Methodology for Effects of Controllable DSM in Forecasts	Project 2010-04
MOD-024-1	Verification of Generator Gross and Net Real Power Capability	Project 2007-09
MOD-025-1	Verification of Generator Gross and Net Reactive Power Capability	Project 2007-09
MOD-026-1	Verification of Models and Data for Generator Excitation System Functions	Project 2007-09
MOD-027-1	Verification of Generator Unit Frequency Response	Project 2007-09
Personnel Performance, Training, and Qualifications (PER) Standards		
PER-001-0	Operating Personnel Responsibility and Authority	Project 2007-03
PER-002-0	Operating Personnel Training	Project 2006-01
PER-003-0	Operating Personnel Credentials	Project 2007-04
PER-004-1	Reliability Coordination — Staffing	Project 2006-01
Protection and Control (PRC) Standards		
PRC-001-1	System Protection Coordination	Project 2007-06 and Project 2009-02
PRC-002-1	Define Regional Disturbance Monitoring and Reporting Requirements	Project 2007-11
PRC-003-1	Regional Procedure for Analysis of Misoperations of Transmission and Generation Protection Systems	Project 2010-05
PRC-004-1	Analysis and Mitigation of Transmission and Generation Protection System Misoperations	Project 2010-05
PRC-005-1	Transmission and Generation Protection System Maintenance and Testing	Project 2007-17
PRC-006-0	Development and Documentation of Regional UFLS Programs	Project 2007-01

Standard	Standard Name	Project Number
PRC-007-0	Assuring Consistency with Regional UFLS Program Requirements	Project 2007-01
PRC-008-0	Underfrequency Load Shedding Equipment Maintenance Programs	Project 2007-17
PRC-009-0	UFLS Performance Following an Underfrequency Event	Project 2007-01
PRC-010-0	Assessment of the Design and Effectiveness of UVLS Program	Project 2008-02
PRC-011-0	UVLS System Maintenance and Testing	Project 2007-17
PRC-012-0	Special Protection System Review Procedure	Project 2010-05
PRC-013-0	Special Protection System Database	Project 2010-03
PRC-014-0	Special Protection System Assessment	Project 2010-05
PRC-015-0	Special Protection System Data and Documentation	Project 2010-03
PRC-016-0	Special Protection System Misoperations	Project 2010-05
PRC-017-0	Special Protection System Maintenance and Testing	Project 2007-17
PRC-018-1	Disturbance Monitoring Equipment Installation and Data Reporting	Project 2007-11
PRC-019-1	Coordination of Generator Voltage Regulator Controls with Unit Capabilities and Protection	Project 2007-09
PRC-020-1	Under-Voltage Load Shedding Program Database	Project 2010-03
PRC-021-1	Under-Voltage Load Shedding Program Data	Project 2010-03
PRC-022-1	Under-Voltage Load Shedding Program Performance	Project 2008-02
PRC-024-1	Under-Voltage Load Shedding Program Performance	Project 2007-09
Transmission Operations (TOP) Standards		
TOP-001-1	Reliability Responsibilities and Authorities	Project 2007-03 and Project 2009-02
TOP-002-2	Normal Operations Planning	Project 2007-03 and Project 2009-02
TOP-003-0	Planned Outage Coordination	Project 2007-03 and Project 2009-02
TOP-004-1	Transmission Operations	Project 2007-03 and Project 2009-02
TOP-004-2	Transmission Operations	Project 2007-03 and Project 2009-02
TOP-005-1	Operational Reliability Information	Project 2007-03 and Project 2009-02
TOP-006-1	Monitoring System Conditions	Project 2007-03 and Project 2009-02
TOP-007-0	Reporting SOL and IROL Violations	Project 2007-03
TOP-008-1	Response to Transmission Limit Violations	Project 2007-03

Standard	Standard Name	Project Number
Transmission Planning (TPL) Standards		
TPL-001-0	System Performance Under Normal Conditions	Project 2006-02
TPL-002-0	System Performance Following Loss of a Single BES Element	Project 2006-02
TPL-003-0	System Performance Following Loss of Two or More BES Elements	Project 2006-02
TPL-004-0	System Performance Following Extreme BES Events	Project 2006-02
TPL-005-0	Regional and Interregional Self-Assessment Reliability Reports	Project 2006-02
TPL-006-0	Assessment Data from Regional Reliability Organizations	Project 2006-02
Voltage and Reactive (VAR) Standards		
VAR-001-1	Voltage and Reactive Control	Project 2008-01 and Project 2009-02
VAR-001-1a	Voltage and Reactive Control	Project 2008-01 and Project 2009-02
VAR-002-1	Generator Operation for Maintaining Network Voltage Schedules	Project 2008-01
VAR-002-1a	Generator Operation for Maintaining Network Voltage Schedules	Project 2008-01

Reference Identifying the Standard in each Project Sorted by Project Number

Project 2006-01 System Personnel Training o PER-002-0 — Operating Personnel Training o PER-004-1 — Reliability Coordination — Staffing
Project 2006-02 Assess Transmission Future Needs o TPL-001-0 — System Performance Under Normal Conditions o TPL-002-0 — System Performance Following Loss of a Single BES Element o TPL-003-0 — System Performance Following Loss of Two or More BES Elements o TPL-004-0 — System Performance Following Extreme BES Events o TPL-005-0 — Regional and Interregional Self-Assessment Reliability Reports o TPL-006-0 — Assessment Data from Regional Reliability Organizations
Project 2006-03 System Restoration and Blackstart o EOP-005-1 — System Restoration Plans o EOP-006-1 — Reliability Coordination — System Restoration o EOP-007-0 — Establish, Maintain, and Document a Regional Blackstart Capability Plan o EOP-009-0 — Documentation of Blackstart Generating Unit Test Results
Project 2006-04 Back-up Facilities o EOP-008-0 Plans for Loss of Control Center Functionality
Project 2006-06 Reliability Coordination o COM-001-1 — Telecommunications o COM-002-2 — Communications and Coordination o IRO-001-1 — Reliability Coordination — Responsibilities and Authorities o IRO-002-1 — Reliability Coordination — Facilities o IRO-005-2 — Reliability Coordination — Current-Day Operations o IRO-014-1 — Procedures, Processes, or Plans to Support Coordination Between Reliability Coordinators o IRO-015-1 — Notifications and Information Exchange Between Reliability Coordinators o IRO-016-1 — Coordination of Real-time Activities Between Reliability Coordinators
Project 2006-07 Transfer Capabilities: ATC, TTC, CBM, and TRM o FAC-012-1 — Transfer Capability Methodology o FAC-013-1 — Establish and Communicate Transfer Capabilities o MOD-001-0 — Documentation of TTC and ATC Calculation Methodologies o MOD-002-0 — Review of TTC and ATC Calculations and Results o MOD-003-0 — Procedure for Input on TTC and ATC Methodologies and Values o MOD-004-0 — Documentation of Regional CBM Methodologies o MOD-005-0 — Procedure for Verifying CBM Values o MOD-006-0 — Procedure for the Use of CBM Values o MOD-007-0 — Documentation of the Use of CBM o MOD-008-0 — Documentation and Content of Each Regional TRM Methodology o MOD-009-0 — Procedure for Verifying TRM Values
Project 2006-08 Transmission Loading Relief o IRO-006-3 — Reliability Coordination — Transmission Loading Relief o IRO-006-4 — Reliability Coordination — Transmission Loading Relief
Project 2006-09 Facility Ratings o FAC-008-1 — Facility Ratings Methodology o FAC-009-1 Establish and Communicate Facility Ratings
Project 2007-01 Underfrequency Load Shedding o PRC-006-0 — Development and Documentation of Regional UFLS Programs o PRC-007-0 — Assuring Consistency with Regional UFLS Program Requirements o PRC-009-0 — UFLS Performance Following an Underfrequency Event
Project 2007-02 Operating Personnel Communications Protocols o COM-002-2 — Communications and Coordination
Project 2007-03 Real-time Operations o PER-001-0 — Operating Personnel Responsibility and Authority

- TOP-001-1 — Reliability Responsibilities and Authorities
- TOP-002-2 — Normal Operations Planning
- TOP-003-0 Planned Outage Coordination
- TOP-004-1 — Transmission Operations
- TOP-004-2 — Transmission Operations
- TOP-005-1 — Operational Reliability Information
- TOP-006-1 — Monitoring System Conditions
- TOP-007-0 — Reporting SOL and IROL Violations
- TOP-008-1 — Response to Transmission Limit Violations

Project 2007-04 Certifying System Operators

- PER-003-0 — Operating Personnel Credentials

Project 2007-05 Balancing Authority Controls

- BAL-002-0 — Disturbance Control Performance
- BAL-004-0 — Time Error Correction
- BAL-004-1 — Time Error Correction
- BAL-005-0 — Automatic Generation Control
- BAL-005-0b — Automatic Generation Control
- BAL-006-1 — Inadvertent Interchange

Project 2007-06 System Protection Coordination

- PRC-001-1 — System Protection Coordination

Project 2007-07 Vegetation Management

- FAC-003-1 — Transmission Vegetation Management Program

Project 2007-09 Generator Verification

- MOD-024-1 — Verification of Generator Gross and Net Real Power Capability
- MOD-025-1 — Verification of Generator Gross and Net Reactive Power Capability
- MOD-026-1 — Verification of Models and Data for Generator Excitation System Functions
- MOD-027-1 — Verification of Generator Unit Frequency Response
- PRC-019-1 — Coordination of Generator Voltage Regulator Controls with Unit Capabilities and Protection
- PRC-024-1 — Generator Performance During Frequency and Voltage Excursions

Project 2007-11 Disturbance Monitoring

- PRC–002-1 — Define Regional Disturbance Monitoring and Reporting Requirements
- PRC–018-1 — Disturbance Monitoring Equipment Installation and Data Reporting

Project 2007-14 Permanent Changes to CI Timing Table

- INT–005-1 — Interchange Authority Distributes Arranged Interchange
- INT–005-2 — Interchange Authority Distributes Arranged Interchange
- INT–006-2 — Response to Interchange Authority
- INT–008-1 — Interchange Authority Distributes Status
- INT–008-2 — Interchange Authority Distributes Status

Project 2007-17 Protection System Maintenance and Testing

- PRC–005-1 — Transmission and Generation Protection System Maintenance and Testing
- PRC–008-0 — Underfrequency Load Shedding Equipment Maintenance Programs
- PRC–011-0 — UVLS System Maintenance and Testing
- PRC–017-0 — Special Protection System Maintenance and Testing

Project 2007-18 Reliability-based Control

- BAL–001-0 — Real Power Balancing Control Performance
- BAL–001-0a — Real Power Balancing Control Performance
- BAL–003-0a — Frequency Response and Bias
- EOP–002-2 — Capacity and Energy Emergencies
- IRO–005-2 — Reliability Coordination — Current-Day Operations

Project 2008-01 Voltage and Reactive Control

- VAR–001-1 — Voltage and Reactive Control
- VAR–001-1a — Voltage and Reactive Control
- VAR–002-1 — Generator Operation for Maintaining Network Voltage Schedules
- VAR–002-1a — Generator Operation for Maintaining Network Voltage Schedules

Project 2008-02 Undervoltage Load Shedding
- PRC–010-0 — Assessment of the Design and Effectiveness of UVLS Program
- PRC–022-1 — Under-Voltage Load Shedding Program Performance

Project 2008-04 Facility Ratings (Pending Regulatory Approval)
- FAC–010-2 — System Operating Limits Methodology for the Planning Horizon
- FAC–011-2 — System Operating Limits Methodology for the Operations Horizon
- FAC–014-2 — Establish and Communicate System Operating Limits

Project 2008-05 Credible Multiple Element Contingencies
- FAC–011-1 — System Operating Limits Methodology for the Operations Horizon
- FAC–011-2 — System Operating Limits Methodology for the Operations Horizon

Project 2008-06 Cyber Security — Order 706
- CIP–002–1 — Critical Cyber Asset Identification
- CIP–003–1 — Security Management Controls
- CIP–004–1 — Personnel and Training
- CIP–005–1 — Electronic Security Perimeter(s)
- CIP–006-1 — Physical Security
- CIP–006-1a — Cyber Security — Physical Security
- CIP–007–1 — Systems Security Management
- CIP–008–1 — Incident Reporting and Response Planning
- CIP–009–1 — Recovery Plans for Critical Cyber Assets

Project 2008-08 EOP VSL Revisions
- EOP-001-0 — Emergency Operations Planning
- EOP-002-2 — Capacity and Energy Emergencies
- EOP-003-1 — Load Shedding Plans
- EOP-004-1 — Disturbance Reporting
- EOP-005-1 — System Restoration Plans
- EOP-006-1 — Reliability Coordination — System Restoration
- EOP-008-0 — Plans for Loss of Control Center Functionality
- EOP-009-0 — Documentation of Blackstart Generating Unit Test Results

Project 2008-12 Coordinate Interchange Standards
- INT-001-3 — Interchange Information
- INT-003-2 — Interchange Transaction Implementation
- INT-004-1 — Dynamic Interchange Transaction Modifications
- INT-005-2 — Interchange Authority Distributes Arranged Interchange
- INT-006-2 — Response to Interchange Authority
- INT-007-1 — Interchange Confirmation
- INT-008-1 — Interchange Authority Distributes Status
- INT-008-2 — Interchange Authority Distributes Status
- INT-009-1 — Implementation of Interchange
- INT-010-1 — Interchange Coordination Exemptions

Project 2009-01 Disturbance and Sabotage Reporting
- CIP-001-1 — Sabotage Reporting
- EOP-004-1 — Disturbance Reporting

Project 2009-02 Real-time Tools
- BAL-002-0 — Disturbance Control Performance
- BAL-005-0 — Automatic Generation Control
- BAL-005-0b — Automatic Generation Control
- COM-001-1 — Telecommunications
- EOP-003-1 — Load Shedding Plans
- EOP-005-1 — System Restoration Plans
- IRO-002-1 — Reliability Coordination — Facilities
- IRO-003-2 — Reliability Coordination — Wide-Area View
- IRO-004-1 — Reliability Coordination — Operations Planning
- IRO-005-2 — Reliability Coordination — Current-Day Operations
- PRC-001-1 — System Protection Coordination

- TOP-001-1 — Reliability Responsibilities and Authorities
- TOP-002-2 — Normal Operations Planning
- TOP-003-0 — Planned Outage Coordination
- TOP-004-1 — Transmission Operations
- TOP-004-2 — Transmission Operations
- TOP-005-1 — Operational Reliability Information
- TOP-006-1 — Monitoring System Conditions
- VAR-001-1 — Voltage and Reactive Control
- VAR-001-1a — Voltage and Reactive Control

Project 2009-03 Emergency Operations

- EOP-001-0 — Emergency Operations Planning
- EOP-002-2 — Capacity and Energy Emergencies
- EOP-003-1 — Load Shedding Plans
- IRO-001-1 — Reliability Coordination — Responsibilities and Authorities

Project 2010-02 Connecting New Facilities to the Grid

- FAC-001-0 — Facility Connection Requirements
- FAC-002-0 — Coordination of Plans for New Facilities

Project 2010-03 Modeling Data

- MOD-010-0 — Steady-State Data for Transmission System Modeling and Simulation
- MOD-011-0 — Regional Steady-State Data Requirements and Reporting Procedures
- MOD-012-0 — Dynamics Data for Transmission System Modeling and Simulation
- MOD-013-1 — RRO Dynamics Data Requirements and Reporting Procedures
- MOD-014-0 — Development of Interconnection-Specific Steady State System Models
- MOD-015-0 — Development of Interconnection-Specific Dynamics System Models
- PRC-013-0 — Special Protection System Database
- PRC-015-0 — Special Protection System Data and Documentation
- PRC-020-1 — Under-Voltage Load Shedding Program Database
- PRC-021-1 — Under-Voltage Load Shedding Program Data

Project 2010-04 Demand Data

- MOD-016-1 — Actual and Forecast Demands, Net Energy for Load, Controllable DSM
- MOD-017-0 — Aggregated Actual and Forecast Demands and Net Energy for Load
- MOD-018-0 — Reports of Actual and Forecast Demand Data
- MOD-019-0 — Forecasts of Interruptible Demands and DCLM Data
- MOD-020-0 — Providing Interruptible Demands and DCLM Data
- MOD-021-0 — Accounting Methodology for Effects of Controllable DSM in Forecasts

Project 2010-05 Protection Systems

- PRC-003-1 — Regional Procedure for Analysis of Misoperations of Transmission and Generation Protection Systems
- PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations
- PRC-012-0 — Special Protection System Review Procedure
- PRC-014-0 — Special Protection System Assessment
- PRC-016-0 — Special Protection System Misoperations

Project 2006-01 System Personnel Training

Standards Involved:

PER-002-0 — Operating Personnel Training
PER-004-1 — Reliability Coordination – Staffing
1200 — Urgent Action Standard — Cyber Security — 1211 Training

Research Needed:

None

Brief Description:

The standard requires the use of a systematic approach to determining training needs of the real-time system operators who work for the Reliability Coordinator, Balancing Authority and Transmission Operator. The standard requires each Reliability Coordinator, Balancing Authority and Transmission Operator to:

- Identify the desired performance for each real-time, reliability-related task performed by its real-time system operators.
- Measure the mismatch between actual and desired performance, and
- Use the results of the mismatch between desired and actual performance as the basis for determining training needs, developing, delivering and evaluating training.

The standard requires that entities have evidence that this systematic approach is used and requires that each responsible entity have evidence that each of its real-time system operators is competent to perform each assigned task that is on its company-specific list of reliability-related tasks.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project 2006-01 System Personnel Training Web page

Project Schedule:

Project 2006-01 Schedule

Target Completion Date:

Fourth quarter of 2008

Related Links:

Project 2006-01 Roster

Issues to be Considered by Drafting Team Project 2006-1 — System Personnel Training	
Standard #	**Title**
PER-002-0	Operating Personnel Training
Issues	FERC Order 693 Disposition: Approved with modifications • Identify the expectations of the training for each job function. • Develop training programs tailored to each job function with consideration to the individual training needs. • Expand the applicability section to include reliability coordinators, local transmission control center operating personnel, generator operators centrally-located at a generator control center with direct impact on the reliable operation of the bulk power system, and operations planning and operations support staff that carry out outage planning and assessments and those who develop SOLs, IROLs, or operating nomograms. • Use the systematic approach to training methodology in the development of new training programs. • Include the use of simulators by reliability coordinators, transmission operators, and balancing authorities that have operational control over a significant portion of load and generation. • Determine the feasibility of developing meaningful performance metrics associated with the effectiveness of the training programs. • Consider whether personnel that support EMS applications should be included in the mandatory training requirements. • Consider FirstEnergy's comments regarding the nuclear plant operators' training program as part of the standards development process. Fill-in-the-Blank Team Comments • R3.1 has regional text but it is unnecessary and could be removed V0 Industry Comments • Measure is weak • Other entities should be included • Replace 5 days with 32 contact hours as per agreement • Specify calendar year time increment Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit Observation Team • R3. The question was raised concerning how each of the regions interprets "training program objectives?" Either high level or down to the lesson plan objectives.

Issues to be Considered by Drafting Team Project 2006-01 — System Personnel Training	
Standard #	**Title**
PER-004-1	Reliability Coordination – Staffing
Issues	FERC Order 693 Disposition: Approve with modifications • Include formal training requirements for reliability coordinators similar to those addressed under PER-002. • Include requirements pertaining to personnel credentials for reliability coordinators similar to PER-003. • Consider the suggestions of FirstEnergy and Xcel as part of the standards development process. V0 Industry Comments • Calendar year timing increment • Other training needs to be defined Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Project 2006-02 Assess Transmission and Future Needs

Standards Involved:

TPL-001-0 — System Performance under Normal Conditions
TPL-002-0 — System Performance Following Loss of a Single BES Element
TPL-003-0 — System Performance Following Loss of Two or More BES Elements
TPL-004-0 — System Performance Following Extreme BES Events
TPL-005-0 — Regional and Interregional Self-Assessment Reliability Reports
TPL-006-0 — Assessment Data from Regional Reliability Organizations

Research Needed:

None

Brief Description:

The proposed work effort will establish requirements where requirements do not exist, and verify and clarify the existing standards for assessing and reporting the performance of planned bulk electric systems and the requirements for documenting plans to remedy any inadequacies identified in the process of conducting such assessments.

Consideration will be given to the many proposed improvements identified in the 'Issues' list for each of the above standards.

The drafting team will also work to incorporate the interpretation on TPL-002 Requirement R1.3.12 and Requirement R1.32 and the interpretation on TPL-003 Requirement R1.3.12 and Requirement R1.32.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project 2006-02 Assess Transmission and Future Needs Web Page

Project Schedule:

Project 2006-02 Schedule

Target Completion Date:

Fourth quarter of 2009

Related Links:

Project 2006-02 Roster

Issues to be Considered by Drafting Team Project 2006-02 — Assess Transmission and Future Needs	
Standard #	**Title**
TPL-001-0	System Performance Under Normal (No Contingency) Conditions (Category A)
Issues	FERC Order 693 Disposition: Approve with modifications • Determine critical system conditions and study years by conducting sensitivity analysis with due consideration of the factors outlined by the Commission. • Require a peer review of planning assessments with neighboring entities. • Modify requirement R1.3 to substitute the reference to regional reliability organization with regional entity. • Require assessments of outages of critical long lead time equipment, consistent with an entity's spare equipment strategy • Address concerns with footnote (a) of Table 1 with regard to applicability of emergency ratings and consistency of normal ratings and voltages with values obtained from other reliability standards and concerns raised by International Transmission with regard to the footnotes in Table 1. FERC Order 693 – TPL General Comments • Consider integrating TPL-001 through TPL-004 into one standard. • Submit an informational filing, in addition to regional criteria, all utility and RTO/ISO differences in transmission planning criteria that are more stringent than those specified by the TPL standards. • Consider the full range of variables when determining critical system conditions but only those deemed to be significant need to be assessed and documentation provided that explain the rational for selection. • System performance should be assessed based on contingencies that mimic what happens in real-time. • Entities that have planned and designed their systems on the basis of a different approach to single contingencies should work with NERC in developing plans to transition to this new approach. • Consider appropriate revisions to the reliability standards to deal with cyber security events. V0 Industry Comments • Several semantic issues • Clarify timing for submittal of corrective plan • Clarify use of applicable ratings in Table 1, note 'a' • Need to address deliverability to load • Define critical system conditions • Allow for engineering judgment in setting conditions for power flow • Do planned facilities include just those under construction? • Need to include multiple time frames • What is a major load center? • Table 1 – C.5 goes beyond double circuit outage criteria • Table 1, items 6, 7, 8 & 9 need footnote stating that they do not apply to generator breaker failure

	• Table 1, note 'b' – clarify when to curtail firm deliveries Phase III/IV comments • Add a requirement to verify that there are sufficient reactive resources • Add a requirement to identify where UVLS should be installed VRF comment • R1 – time horizon should be long-term planning Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2006-02 — Assess Transmission and Future Needs	
Standard #	**Title**
TPL-002-0	System Performance Following Loss of a Single Bulk Electric System Element (Category B)
Issues	FERC Order 693 Disposition: Approved with modifications • Determine critical system conditions in the same manner as proposed in TPL-001. • Requires assessment of planned outages of long lead time critical equipment consistent with the entity's spare equipment strategy. • Requires all generators to ride through the same set of category B and C contingencies as required by wind generators in Order No. 661, or to simulate without this capability as tripping. • Document the load models used in system studies and the rationale for their use. • Clarify the phrase "permit operating steps necessary to maintain system control" in the footnote (a) and the use of emergency ratings. • Clarifies footnote (b) in regard to load loss following a single contingency specifying the amount and duration of consequential load loss and system adjustments permitted after the first contingency to return the system to a normal operating state. NERC should consider this through its standard development process. • Footnote (b) should not allow for firm load shedding or curtailment of firm transfers as part of the system adjustments. • Consider NRC's comments regarding clarifying the N-1 state as being always applicable to the current conditions as part of the standards development process. • Standard should be clarified to not allow an entity to plan for the loss of non-consequential load in the event of a single contingency. FERC Order 693 – TPL General Comments • Consider integrating TPL-001 through TPL-004 into one standard. • Submit an informational filing, in addition to regional criteria, all utility and RTO/ISO differences in transmission planning criteria that are more stringent than those specified by the TPL standards. • Consider the full range of variables when determining critical system conditions but only those deemed to be significant need to be assessed and documentation provided that explain the rational for selection. • System performance should be assessed based on contingencies that mimic what happens in real-time. • Entities that have planned and designed their systems on the basis of a different approach to single contingencies should work with NERC in developing plans to transition to this new approach. • Consider appropriate revisions to the reliability standards to deal with cyber security events. V0 Industry Comments • Define critical system conditions • Clarify timing for corrective plan • Address deliverability of generation to load

	• Clarify applicable ratings in Table 1, note 'a' • Don't include generation runback or redispatch • Must study all contingencies and multiple demand levels & time frames • Don't include planning outage • Single terminals are not included Phase III/IV comments • Add a requirement to verify that there are sufficient reactive resources • Add a requirement to identify where UVLS should be installed VRF comments • Time horizon should be long-term planning and R2.2 – redundant with R1.3.8 Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned Standards Process • Incorporate approved formal interpretation Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2006-02 — Assess Transmission and Future Needs	
Standard #	**Title**
TPL-003-0	System Performance Following loss of Two or More Bulk Electric System Elements (Category C)
Issues	FERC Order 693 Disposition: Approved with modifications • Determine critical system conditions in the same manner as proposed in TPL-001. • Modify footnote © of Table 1 to clarify the term "controlled load interruption". • Applicable entities must define and document the proxies necessary to simulate cascading outages. • Tailor the purpose statement to reflect the specific goal of the standard. • Address LPPA's concerns on changes to footnotes of Table 1 through the standard development process. • Address NRC concerns as described in TPL-002 through the standards development process. • Consider the comments on major load pockets as part of the standards development process. FERC Order 693 – TPL General Comments • Consider integrating TPL-001 through TPL-004 into one standard. • Submit an informational filing, in addition to regional criteria, all utility and RTO/ISO differences in transmission planning criteria that are more stringent than those specified by the TPL standards. • Consider the full range of variables when determining critical system conditions but only those deemed to be significant need to be assessed and documentation provided that explain the rational for selection. • System performance should be assessed based on contingencies that mimic what happens in real-time. • Entities that have planned and designed their systems on the basis of a different approach to single contingencies should work with NERC in developing plans to transition to this new approach. • Consider appropriate revisions to the reliability standards to deal with cyber security events. V0 Industry Comments • Same as TPL-001 & 002 • TO should provide plan of action • Don't base penalties on low probability, low consequence events • Use NERC Compliance Reporting Process • Clearly identify outages Phase III/IV comments • Add a requirement to verify that there are sufficient reactive resources • Add a requirement to identify where UVLS should be installed VRF comment • Time horizon should be long-term planning

	• R2 – lack of consistency with TPL-001 & TPL-002 • R2.1 - lack of consistency with TPL-001 • R2.1.1 - lack of consistency with TPL-001 & TPL-004 • R2.1.2 - lack of consistency with TPL-001 & TPL-005 • R2.1.3 - lack of consistency with TPL-001 & TPL-006 • R2.2 - lack of consistency with TPL-001 & TPL-007 Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned Standards Process • Incorporate approved formal interpretation Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2006-02— Assess Transmission and Future Needs	
Standard #	**Title**
TPL-004-0	System Performance Following Extreme Events Resulting in the Loss of Two or More Bulk Electric System Elements (Category D)
Issues	FERC Order 693 Disposition: Approve with modifications • Determine critical system conditions in the same manner as proposed in TPL-001. • Identify options for reducing the probability or impacts of extreme events that cause cascading. • Expand the list of category D events to include recent actual events. • Tailor the purpose statement to reflect the specific goal of the standard. FERC Order 693 – TPL General Comments • Consider integrating TPL-001 through TPL-004 into one standard. • Submit an informational filing, in addition to regional criteria, all utility and RTO/ISO differences in transmission planning criteria that are more stringent than those specified by the TPL standards. • Consider the full range of variables when determining critical system conditions but only those deemed to be significant need to be assessed and documentation provided that explain the rational for selection. • System performance should be assessed based on contingencies that mimic what happens in real-time. • Entities that have planned and designed their systems on the basis of a different approach to single contingencies should work with NERC in developing plans to transition to this new approach. • Consider appropriate revisions to the reliability standards to deal with cyber security events. V0 Industry Comments • Same as TPL-001 • Perform analysis on credible contingency • R1.3.9 – remove from extreme events • TO should determine which events to study Phase III/IV comments • Add a requirement to verify that there are sufficient reactive resources • Add a requirement to identify where UVLS should be installed Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. •

Issues to be Considered by Drafting Team Project 2006-02 — Assess Transmission and Future Needs		
Standard #	**Title**	
TPL-005-0	Regional and Interregional Self-Assessment Reliability Reports	
Issues	FERC Order 693 Disposition: Not approved or remanded • Encourages NERC to utilize input from the Commission's technical conferences on regional planning as directed in Order No. 890 to improve this standard. FERC Order 693 – TPL General Comments • Consider integrating TPL-001 through TPL-004 into one standard. • Submit an informational filing, in addition to regional criteria, all utility and RTO/ISO differences in transmission planning criteria that are more stringent than those specified by the TPL standards. • Consider the full range of variables when determining critical system conditions but only those deemed to be significant need to be assessed and documentation provided that explain the rational for selection. • System performance should be assessed based on contingencies that mimic what happens in real-time. • Entities that have planned and designed their systems on the basis of a different approach to single contingencies should work with NERC in developing plans to transition to this new approach. • Consider appropriate revisions to the reliability standards to deal with cyber security events. Fill-in-the-Blank Team Comments • New SAR needed V0 Industry Comments • Define fuel adequacy • An RRO can't make a mandatory request for another RRO to perform a study Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	

Issues to be Considered by Drafting Team Project 2006-02 — Assess Transmission and Future Needs		
Standard #	**Title**	
TPL-006-0	Assessment Data from Regional Reliability Organizations	
Issues	FERC Order 693 Disposition: Not approved or remanded FERC Order 693 – TPL General Comments • Consider integrating TPL-001 through TPL-004 into one standard. • Submit an informational filing, in addition to regional criteria, all utility and RTO/ISO differences in transmission planning criteria that are more stringent than those specified by the TPL standards. • Consider the full range of variables when determining critical system conditions but only those deemed to be significant need to be assessed and documentation provided that explain the rational for selection. • System performance should be assessed based on contingencies that mimic what happens in real-time. • Entities that have planned and designed their systems on the basis of a different approach to single contingencies should work with NERC in developing plans to transition to this new approach. • Consider appropriate revisions to the reliability standards to deal with cyber security events. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	

Project 2006-03 System Restoration and Blackstart

Standards Involved:

EOP-005-1 — System Restoration Plans
EOP-006-1 — Reliability Coordination - System Restoration
EOP-007-0 — Establish, Maintain, and Document a Regional Blackstart Capability Plan
EOP-009-0 — Documentation of Blackstart Generating Unit Test Results

Research Needed:

None

Brief Description:

This project involves reviewing and revising the four referenced standards including:

- Resolving the issue of associating compliance measures with Attachment 1-EOP-005 elements,
- EOP-005 only requires the TOP and the BA to have a system restoration plan. The role of these and other entities, especially the Reliability Coordinator, needs to be defined.
- Both EOP-005 and EOP-006 contain a mix of requirements that address advance planning and real-time operations. The Standards Drafting Team (SDT) should consider the need to clearly delineate the two processes within the standards requirements.
- The elimination of 'fill-in-the-blank' components in EOP-007-0 and EOP-009.
- Other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable standards and consistent with establishing technically sufficient bulk power system blackstart and restoration standards.

Work is not to be limited to the 'To Do Lists'. Those items shall be considered but are not mandatory revisions**.** Consideration will also be given to the comments on the appropriate EOP standards in FERC Order #693, issued March 16, 2007.

Throughout the process, the SDT should identify any conflicts that are found with other existing standards and bring them to the attention of the Standards Committee for resolution.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project 2006-03 System Restoration and Blackstart Web page

Project Schedule:

Project 2006-03 Schedule

Target Completion Date:

First quarter of 2009

Related Links:

Project 2006-03 Roster

Issues to be Considered by Drafting Team Project 2006-03 — System Restoration and Blackstart	
Standard #	**Title**
EOP-005-1	System Restoration Plans
Issues	FERC Order 693 Disposition: Approved with modifications • Identify time frames for training and review of restoration plan requirements to simulate contingencies and prepare operators for anticipated and unforeseen events. • NERC shall gather data from simulations and drills of system restoration on the time it takes to restore power to the auxiliary power systems of nuclear power plants under its data gathering authority and report the information to the Commission on a quarterly basis. • Consider commenters concerns in future modifications of the reliability standard, including those that refer to Attachment 1. Fill-in-the-Blank Team Comments • Address EOP-005, EOP-006 EOP-007 and EOP-009 concurrently. • References in EOP-005, EOP-006, and EOP-009 to meet RRO/Regional requirements need to be modified and EOP-007 needs to be more specific. • See "Issues" for EOP-007 V0 Industry Comments • Priority to integrity of interconnection • BA does not have all required information • Interdependency of planning and implementation missing as well as between functional entities • LSE & GO should have plans • Additional element consideration • Can't really test plan Phase III/IV comments • Add LSEs to Applicability • Add a requirement for a blackstart agreement between the transmission operator and the generator owner - include items such as identification of generator owner/operator facilities required to participate in the blackstart plan; when and how quickly a blackstart unit must respond; and what cranking path requires energization • Add a requirement for a cranking path agreement between the transmission operator and the generator owner/operator • Condense the requirements and measures - R1 the requirement to develop the restoration plan and all the components required of that plan; and R2 the requirement to prove and document that the plan works. Then, two measurements would follow: one to assess the contents of the plan and one to assess the simulation or testing of the plan. • Need to resolve the issue of the elements on the Attachment – are these mandatory or not – there is a mismatch between R1 and levels of non-compliance • R3 – revise to place emphasis for TOP on restoring local transmission system as preparation for restoring the integrity of the Interconnection. • R4 – Add LSEs

	• R5 – replace 'periodic' with a specific periodicity for testing • R6 – add specificity to frequency and scope of required training • R11.5 - replace the word, 'may' with: The affected Transmission Operators shall not resynchronize the isolated area(s) with the surrounding area(s) until the following conditions are met: the voltage, frequency, and phase angle permit, the affected reliability coordinator(s) and the adjacent areas are notified, and reliability coordinator approval is given. • Delete R11.5.4. It does not seem reasonable or logical for a control area to be required to shed 5,000 MWs of load, for example, in order for their neighbor to reconnect 1,000 MWs of their own load. • R11.5. Should exclude islands within a system that do not affect surrounding areas VRF comments • R1, 5 & 8 – Does not just apply to local restoration • R2 – Could be broken up into 2 requirements • R11.4 – Ambiguous • R11.5 - This needs to be looked at for 30 days - should be done prior to access being granted. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • How do you include load to be shed in the System Restoration plan?

Issues to be Considered by Drafting Team Project 2006-03 — System Restoration and Blackstart		
Standard #	**Title**	
EOP-006-1	Reliability Coordination – System Restoration	
Issues	FERC Order 693 Disposition: Approved with modifications • Ensure the reliability coordinator is involved in the development and approval of system restoration plans. Fill-in-the-Blank Team Comments • Address EOP-005, EOP-006 EOP-007 and EOP-009 concurrently • References in EOP-005, EOP-006, and EOP-009 to meet RRO/Regional requirements need to be modified and EOP-007 needs to be more specific • See "Issues" for EOP-007 Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	

Issues to be Considered by Drafting Team Project 2006-03 — System Restoration and Blackstart	
Standard #	**Title**
EOP-007-0	Establish, Maintain, and Document a Regional Blackstart Capability Plan
Issues	FERC Order 693 Disposition: Not approved or remanded • Until the changes to EOP-006-1 are implemented, the regional reliability organization should continue to perform this role (approval). • Consider EEI, FirstEnergy and MRO's suggestions in future revisions to the standard. Fill-in-the-Blank Team Comments • Address EOP-005, EOP-006 EOP-007 and EOP-009 concurrently • References in EOP-005, EOP-006, and EOP-009 to meet RRO/Regional requirements need to be modified and EOP-007 needs to be more specific. • This is currently a fill-in-the-blank standard tied to EOP-005, EOP-006, and EOP-009; every region should have procedures currently in place required by EOP-007-0; question why this is even an RRO function; they are not operating entities, should be RCs and operating entities that have the black start plan; black start plans need to be coordinated regionally. • Consider retiring EOP-007 and moving these elements to EOP-005; EOP-006; and EOP-009. That would remove fill-in-blank elements. Still may need to evaluate role of RRO.R1 & R2 considerations • Consider rewording of references in EOP-005, EOP-006, and EOP-009 to RRO/regional requirements and • Define the specific requirements for R 1.2, R 1.3, etc. and either clearly defines in EOP-007 or retires EOP-007 and place specific requirements in EOP-005, EOP-006, and EOP-009. • Consider developing testing requirements on a national basis – this is already well established across the regions. The harder task is isolating the restoration issues in the various standards as described in the EOP-007 write-up to merge into a new NERC standard which then establishes which units are designated Blackstart units. This standard could be written independent of the units' identity and focus on testing of any Blackstart unit. V0 Industry Comments • Clarify testing requirements Other • 0Modify standard to conform with the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2006-03 — System Restoration and Blackstart	
Standard #	**Title**
EOP-009-0	Documentation of Blackstart Generating Unit Test Results
Issues	FERC Order 693 Disposition: Approved • Consider suggestions for improvements in future revisions of the standards. Fill-in-the-Blank Team Comments • Address EOP-005, EOP-006 EOP-007 and EOP-009 concurrently. • References in EOP-005, EOP-006, and EOP-009 to meet RRO/Regional requirements need to be modified and EOP-007 needs to be more specific. • See "Issues" for EOP-007 V0 Industry Comments • Distinction between RA & TO vs. RRO for test results Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • Test per year • Test 1/3 of the black-start units per year

Project 2006-04 Backup Facilities

Standards Involved:

EOP-008-0 — Plans for Loss of Control Center Functionality

Research Needed:

A study of backup capabilities needed to support reliable operations is required.

Brief Description:

The requirements in EOP-008 need additional specificity. The development revision to EOP-008 may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards. In addition, the efforts of the OC Backup Control Center Task Force will be used as one of the inputs to the revision of EOP-008. Also, there may be backup facility requirements in some other standards, and those requirements should be considered for movement into this standard.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project 2006-04 Backup Facilities Web page

Project Schedule:

Project 2006-04 Schedule

Target Completion Date:

Second quarter of 2009**Related Links:**

Project 2006-04 Roster

Issues to be Considered by Drafting Team Project 2006-04 — Backup Facilities	
Standard #	**Title**
EOP-008-0	Plans for Loss of Control Center Functionality
Issues	FERC Order 693 Disposition: Approved with modifications Include a requirement that provides for backup capabilities that, at a minimum, must: • Be independent of the primary control center • Be capable of operating for a prolonged period of time, generally defined by the time it takes to restore the primary control center. • Provide for a minimum functionality to replicate the critical reliability functions of the primary control center. • Provides that the extent of the backup capability be consistent with the impact of the loss of the entity's primary control center on the reliability of the bulk power system. • Includes a requirement that all reliability coordinators have full backup control centers; • Requires transmission operators and balancing authorities that have operational control over significant portions of generation and load to have minimum backup capabilities discussed above but may do so through contracting for these services instead of through dedicated backup control centers. V0 Industry Comments • How does staff know control center is lost? (Note – A system health monitor concept or equivalent functionality is what is desired here.) • How is backup control achieved? • Max. time to restore capabilities VRF comments • R1 - Not having a written plan does not directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading • R1.1 - Not having a written plan is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk electric system instability, separation, or cascading failures, nor to hinder restoration to a normal condition. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • Compliance levels don't align with the measures or requirements.

Project 2006-06 Reliability Coordination

Standards Involved:

COM-001-1 — Telecommunications
COM-002-2 — Communications and Coordination
IRO-001-1 — Reliability Coordination – Responsibilities and Authorities
IRO-002-1 — Reliability Coordination – Facilities
IRO-005-2 — Reliability Coordination – Current-Day Operations
IRO-014-1 — Procedures to Support Coordination between Reliability Coordinators
IRO-015-1 — Notifications and Information Exchange Between Reliability Coordinators
IRO-016-1 — Coordination of Real-time Activities between Reliability Coordinators

Research Needed:

Operating Committee study of IROLs and situational awareness tools

Brief Description

Most of the requirements in this set of standards were translated from Operating Policies as part of the Version 0 process. There have been suggestions for improving these requirements, and the drafting team will consider comments submitted by stakeholders, drafting teams and FERC in determining what changes should be proposed to stakeholders.

The drafting team will review all of the requirements in this set of standards and make a determination, with stakeholders, on whether to:

- Modify the requirement to improve its clarity and measureability while removing abiguity Move the requirement (into another SAR or Standard or to the certification process or standards)
- Eliminate the requirement (either because it is redundant or because it doesn't support bulk power system reliability).

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project 2006-06 Reliability Coordination Web page

Project Schedule:

Project 2006-06 Schedule

Target Completion Date:

Second quarter of 2009

Related Links:

Project 2006-06 Roster

Issues to be Considered by Drafting Team Project 2006-06 — Reliability Coordination	
Standard #	**Title**
COM-001-1	Telecommunications
Issues	FERC Order 693 Disposition: Approved with modifications • Include generator operators and distribution providers in the list of applicable entities and create appropriate requirements for them. • Address TAPS, Entergy, Six Cities, and FirstEnergy concerns through the standard development process. • Specify requirements for using telecommunication facilities during normal and emergency conditions that reflect the roles of the applicable entities and their impact of reliable operation, and include adequate flexibility. V0 Industry Comments • Redundant with Policy 5A, R1 • Many players missing • Apply R1 to all but smallest entities VRF comments • R6 — administrative requirement Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Standards Drafting Team Coordinators Meeting • COM-001-1 Telecommunications is being reviewed and revised under Project 2006-06 Reliability Coordination; however, it has been agreed that all requirements of COM-001-1 except R4 will be addressed by the SDT for Project 2006-06 and that requirement R4 will be addressed by the SDT for Project 2007-02 Operating Personnel Communications Protocols. If either part of this agreement is not maintained, COM-001-1 will need revisited.

Issues to be Considered by Drafting Team Project 2006-06 — Reliability Coordination	
Standard #	**Title**
COM-002-2	Communications and Coordination
Issues	FERC Order 693 Disposition: Approved with modifications • Include distribution providers in the list of applicable entities. • Address APPA's concern through the standard development process. • Include a requirement for the reliability coordinator to assess and approve only those actions that have impacts beyond the area views of the transmission operators and balancing authorities. Include how to determine whether an action needs to be assessed by the reliability coordinator. • Consider Xcel's suggestion that the entity taking operating actions should not be held responsible for the delays caused by the reliability coordinator's assessment and approval. • Address Santa Clara, FirstEnergy, and Six Cities concerns in the reliability standards development process. • Include APPA's suggestions to complete the measures and levels of non-compliance. V0 Industry Comments • Voice with generators not required • R1 — include reliability authority • R2 — include sabotage and security • R4 — clarify repeat back requirement with regard to emergency Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Standards Drafting Team Coordinators Meeting • COM-002-2 Communication and Coordination is being reviewed and revised under both Project 2006-06 Reliability Coordination and Project 2007-02 Operating Personnel Communications Protocols; however, it has been agreed that: • Requirement R1will be addressed by the SDT for Project 2006-06 and • Requirement R2 will be addressed by the SDT for Project 2007-02 Operating Personnel Communications Protocols. • If either part of this agreement is not maintained, COM-002-2 will need revisited.

Issues to be Considered by Drafting Team Project 2006-06 — Reliability Coordination	
Standard #	**Title**
IRO-001-1	Reliability Coordination – Responsibilities and Authorities
Issues	FERC Order 693 Disposition: Approve with modifications • Eliminate the references to the regional reliability organization as an applicable entity. • Consider commenters' suggestions as part of the standards development process. • Consider adding measures and levels of non-compliance V0 Industry Comments • Inability to perform needs to be communicated • What is meant by 'interest of other entity'? VRF comments • R6 — Since the RC must be NERC certified, it stands to reason that anyone performing RC tasks should be certified. However, since the RC still retains the accountability for actions, and requirement 4 handles the agreements, this requirement is a medium risk. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • R8 — All applicable registered functions shall comply with RC directives unless such actions would violate safety, equipment or regulatory or statutory requirements. Inform the RC immediately of the inability to perform such directives. For audit purposes, what is acceptable evidence? FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008

	(http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Issues to be Considered by Drafting Team Project 2006-06 — Reliability Coordination		
Standard #	**Title**	
IRO-002-1	Reliability Coordination – Facilities	
Issues	FERC Order 693 Disposition: Approved with modifications • Require a minimum set of tools that must be made available to the reliability coordinator. V0 Industry Comments • R5 – define synchronized information system • R7 – define 'adequate' tools and 'wide-area' • Words such as 'easily understood' and 'particular emphasis' need to be tightened Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	

Issues to be Considered by Drafting Team Project 2006-06 — Reliability Coordination	
Standard #	**Title**
IRO-005-2	Reliability Coordination – Current-Day Operations

Issues

FERC Order 693
Disposition: Approved with modifications

- Provide further clarification that reliability coordinators and transmission operators direct control actions, not LSEs as part of the standard development process.
- Include measures and levels of non-compliance.
- Measures and levels of non-compliance specific to IROL violations must be commensurate with the magnitude, duration, frequency, and causes of the violations and whether these occur during normal or contingency conditions.
- Conduct a survey on IROL practices and actual operating experiences by requiring reliability coordinators to report any violations of IROLS, their causes, the date and time, the durations and magnitudes in which actual operations exceeds IROLs to NERC on a monthly basis for one year beginning August 2, 2007.

Fill-in-the-Blank Team Comments

- R14 has regional reference

V0 Industry Comments

- R10, 11 & 12 – RA not empowered to do this

Other

- Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000

- In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see:
  - FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf)
  - NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf),
  - FERC's April 4, 2008 Order

		(http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Issues to be Considered by Drafting Team Project 2006-06 — Reliability Coordination		
Standard #		**Title**
IRO-014-1		Procedures, Processes, or Plans to Support Coordination Between Reliability Coordinators
Issues	FERC Order 693 Disposition: Approved Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	

Issues to be Considered by Drafting Team Project 2006-06 Reliability Coordination		
Standard #		**Title**
IRO-015-1		Notifications and Information Exchange Between Reliability Coordinators
Issues	FERC Order 693 Disposition: Approved Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	

Issues to be Considered by Drafting Team Project 2006-06 — Reliability Coordination		
Standard #		**Title**
IRO-016-1		Coordination of Real-Time Activities Between Reliability Coordinators
Issues	FERC Order 693 Disposition: Approved VRF comments • R1.2.1 & R2 – ambiguous Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	

Project 2006-07 Transfer Capabilities — (ATC, TTC, CBM, TRM)

Standards Involved:

FAC-012-1 — Transfer Capabilities Methodology
FAC-013-1 — Establish and Communicate Transfer Capabilities
MOD-001-0 — Documentation of TTC and ATC Calculation Methodologies
MOD-002-0 — Review of TTC and ATC Calculations and Results
MOD-003-0 — Procedure for Input on TTC and ATC Methodologies and Values
MOD-004-0 — Documentation of Regional CBM Methodologies
MOD-005-0 — Procedure for Verifying CBM Values
MOD-006-0 — Procedures for Use of CBM Values
MOD-007-0 — Documentation of the Use of CBM
MOD-008-0 — Documentation and Content of Each Regional TRM Methodology
MOD-009-0 — Procedure for Verifying TRM Values

Research Needed:

None

Brief Description:

Most of the requirements in this set of standards were translated from the former Planning Standards as part of the Version 0 process. There have been suggestions for improving these requirements, and the drafting team will consider comments submitted by stakeholders, drafting teams and FERC in determining what changes should be proposed to stakeholders.

The drafting team will review all of the requirements in this set of standards and make a determination, with stakeholders, on whether to:

- Modify the requirement to improve its clarity and measureability while removing abiguity Move the requirement (into another SAR or Standard or to the certification process or standards)
- Eliminate the requirement (either because it is redundant or because it doesn't support bulk power system reliability).

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Coordination with NAESB:

The NAESB Wholesale Electric Quadrant (WEQ) Standards Review Subcommittee (SRS) conducted an analysis of the NERC Reliability Standards Development Plan in order to identify those projects contained in the plan that may be appropriate for the industry, through NAESB, to develop parallel and complementary business practices. Below are NAESB's observations for this project.

Related NAESB WEQ Projects (See NAESB WEQ 2008 Annual plan):
Annual Plan Item 2.a
Annual Plan Item 2.b

Annual Plan Item 2.c

Justification for NAESB consideration:

FERC Order 890
Industry recommendations

SRS Recommendation:

No further SRS action required. This project is already covered by current NAESB WEQ projects. Coordination between NERC & NAESB is in progress.

Standard Development Status:

Project 2006-07 Transfer Capabilities — (ATC, TTC, CBM, and TRM)

Project Schedule:

Project 2006-07 Schedule

Target Completion Date:

Third quarter of 2008 and the fourth quarter of 2008

Related Links:

Project 2006-07 Roster

Issues to be Considered by Drafting Team Project 2006-07 — Transfer Capabilities (ATC, TTC, CBM, TRM)	
Standard #	**Title**
FAC-012-1	Transfer Capability Methodology
Issues	FERC Order 890 • 223. With respect to a timeline for completion, the Commission concurs with NERC that a significant amount of work remains to be done on ATC-related reliability standards development. We also agree with the many commenters who state that the NOPR's proposed six-month timeline is too short for such a complex assignment. Although NERC projects that it may be able to complete the process by the summer of 2007 (which is approximately six months from the date of the Final Rule), we believe NERC should have additional flexibility with respect to its timeline. Accordingly, we direct public utilities, working through NERC, to modify the ATC-related reliability standards within 270 days after the publication of the Final Rule in the Federal Register. We also direct public utilities to work through NAESB to develop business practices that complement NERC's new reliability standards within 360 days after the publication of the Final Rule in the Federal Register. Finally, we direct NERC and NAESB to file, within 90 days of publication of the Final Rule in the Federal Register, a joint status report on standards and business practices development and a work plan for completion of this task within the timeframe established above.160 • 237. The Commission adopts the NOPR proposal and directs public utilities, working through NERC, to develop consistent practices for calculating TTC/TFC. We direct public utilities, working through NERC, to address, through the reliability standards process, any differences in developing TTC/TFC for transmission provided under the pro forma OATT and for transfer capability for native load and reliability assessment studies. FERC Order 693 Disposition: Not approved or remanded • Should provide a framework for transfer capability calculation methodology, including data inputs and modeling assumptions. • Should be an umbrella organization within the Eastern Interconnection and others to assure consistency. This is best done by NERC as the ERO. • Process used to determine transfer capabilities should be transparent to the stakeholders. The results of those calculations should be available to qualified entities on a confidential basis. • The process and criteria used to determine transfer capabilities for use in calculating ATC must be identical to those used in planning and operating the system. Fill-in-the-Blank Team Comments • Remove "required by its Regional Reliability Organization to establish inter-regional and intra-regional Transfer Capabilities "from Applicability section (4.1 and 4.2) of both FAC-012 and FAC-013. • Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

	NERC/NAESB Coordination • The SDT should review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Firm Transmission Service Network Integration Transmission Service Non-Firm Transmission Service Open Access Same-time Information System Point-to-Point Transmission Service Transmission Customer

Issues to be Considered by Drafting Team Project 2006-07 — Transfer Capabilities (ATC, TTC, CBM, TRM)	
Standard #	**Title**
FAC-013-1	Establish and Communicate Transfer Capabilities
Issues	FERC Order 890 • 223. With respect to a timeline for completion, the Commission concurs with NERC that a significant amount of work remains to be done on ATC-related reliability standards development. We also agree with the many commenters who state that the NOPR's proposed six-month timeline is too short for such a complex assignment. Although NERC projects that it may be able to complete the process by the summer of 2007 (which is approximately six months from the date of the Final Rule), we believe NERC should have additional flexibility with respect to its timeline. Accordingly, we direct public utilities, working through NERC, to modify the ATC-related reliability standards within 270 days after the publication of the Final Rule in the Federal Register. We also direct public utilities to work through NAESB to develop business practices that complement NERC's new reliability standards within 360 days after the publication of the Final Rule in the Federal Register. Finally, we direct NERC and NAESB to file, within 90 days of publication of the Final Rule in the Federal Register, a joint status report on standards and business practices development and a work plan for completion of this task within the timeframe established above.160 • 237. The Commission adopts the NOPR proposal and directs public utilities, working through NERC, to develop consistent practices for calculating TTC/TFC. We direct public utilities, working through NERC, to address, through the reliability standards process, any differences in developing TTC/TFC for transmission provided under the pro forma OATT and for transfer capability for native load and reliability assessment studies. FERC Order 693 Disposition: Approved with modifications • Make the standard applicable to reliability coordinators. Fill-in-the-Blank Team Comments • Remove "required by its Regional Reliability Organization to establish inter-regional and intra-regional Transfer Capabilities "from Applicability section (4.1 and 4.2) of both FAC-012 and FAC-013. V0 Industry Comments • Not reviewed • Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • R2 — What do we mean by "schedule for delivery"? NERC/NAESB Coordination • The SDT should review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC

	and NAESB: Firm Transmission Service Network Integration Transmission Service Non-Firm Transmission Service Open Access Same-time Information System Point-to-Point Transmission Service Transmission Customer

Issues to be Considered by Drafting Team Project 2006-07 — Transfer Capabilities (ATC, TTC, CBM, TRM)	
Standard #	**Title**
MOD-001-0	Documentation of Total Transfer Capability and Available Transfer Capability Calculation Methodologies
Issues	FERC Order 890 • 211. As TDU Systems note, there is neither a definition of AFC in NERC's Glossary nor an existing reliability standard that discusses the AFC method. In order to achieve consistency in each component of the ATC calculation (discussed below), we direct public utilities, working through NERC, to develop an AFC definition and requirements used to identify a particular set of transmission facilities as a flowgate. However, we remind transmission providers that our regulations require the posting of ATC values associated with a particular path, not AFC values associated with a flowgate. Transmission providers using an AFC methodology must therefore convert flowgate (AFC) values into path (ATC) values for OASIS posting. In order to have consistent posting of the ATC, TTC, CBM, and TRM values on OASIS, we direct public utilities, working through NERC, to develop in the MOD-001 standard a rule to convert AFC into ATC values to be used by transmission providers that currently use the flowgate methodology. • 212. The Commission also believes that further clarification is necessary regarding the calculation algorithms for firm and non-firm ATC.150 Currently, NERC has no standards for calculating non-firm ATC. We find that the same potential for discrimination exists for non-firm transmission service as for firm service and that greater uniformity in both firm and non-firm ATC calculations will substantially reduce the remaining potential for undue discrimination. Therefore, we direct public utilities, working through NERC, to modify related ATC standards by implementing the following principles for firm and non-firm ATC calculations: (1) for firm ATC calculations, the transmission provider shall account only for firm commitments; and (2) for non-firm ATC calculations, the transmission provider shall account for both firm and non-firm commitments, postbacks of redirected services, unscheduled service, and counterflows. We understand that these principles are currently followed by most transmission providers and believe they should be clearly set forth in the ATC-related reliability standards. As described below, each transmission provider's Attachment C must include a detailed formula for both firm and non-firm ATC, consistent with the modified ATC-related reliability standards. • 223. With respect to a timeline for completion, the Commission concurs with NERC that a significant amount of work remains to be done on ATC-related reliability standards development. We also agree with the many commenters who state that the NOPR's proposed six-month timeline is too short for such a complex assignment. Although NERC projects that it may be able to complete the process by the summer of 2007 (which is approximately six months from the date of the Final Rule), we believe NERC should have additional flexibility with respect to its timeline. Accordingly, we direct public utilities, working through NERC, to modify the ATC-related reliability standards within 270 days after the publication of the Final Rule in the Federal Register. We also direct public utilities to work through NAESB to develop business practices that complement NERC's new reliability standards within 360 days after the publication of the Final Rule in the Federal Register. Finally, we direct NERC and NAESB to file, within 90 days of publication of the Final Rule in the Federal

	Register, a joint status report on standards and business practices development and a work plan for completion of this task within the timeframe established above.160 • 237. The Commission adopts the NOPR proposal and directs public utilities, working through NERC, to develop consistent practices for calculating TTC/TFC. We direct public utilities, working through NERC, to address, through the reliability standards process, any differences in developing TTC/TFC for transmission provided under the pro forma OATT and for transfer capability for native load and reliability assessment studies. • 243. To achieve greater consistency in ETC calculations and further reduce the potential for undue discrimination, the Commission adopts the NOPR proposal and directs public utilities, working through NERC and NAESB, to develop a consistent approach for determining the amount of transfer capability a transmission provider may set aside for its native load and other committed uses. We expect that NERC will address ETC through the MOD-001 reliability standard rather than through a separate reliability standard. 169 By using MOD-001, the ETC calculation can be adjusted to be applicable to each of the three ATC methodologies under development by NERC. • 244. In order to provide specific direction to public utilities and NERC, we determine that ETC should be defined to include committed uses of the transmission system, including (1) native load commitments (including network service), (2) grandfathered transmission rights, (3) appropriate point-to-point reservations, 170 (4) rollover rights associated with long-term firm service, and (5) other uses identified through the NERC process. ETC should not be used to set aside transfer capability for any type of planning or contingency reserve, which are to be addressed through CBM and TRM.171 In addition, in the short-term ATC calculation, all reserved but unused transfer capability (non-scheduled) shall be released as non-firm ATC. • 245. We agree with TDU Systems that inclusion of all requests for transmission service in ETC would likely overstate usage of the system and understate ATC. We therefore find that reservations that have the same point of receipt (POR) (generator) but different point of delivery (POD) (load), for the same time frame, should not be modeled in the ETC calculation simultaneously if their combined reserved transmission capacity exceeds the generator's nameplate capacity at POR. This will prevent overly unrealistic utilization of transmission capacity associated with power output from a generator identified as a POR. We direct public utilities, working through NERC, to develop requirements in MOD-001 that lay out clear instructions on how these reservations should be accounted. One approach that could be used is examining historical patterns of actual reservation use during a particular season, month, or time of day. • 292. The Commission also adopts the NOPR proposal to require transmission providers to use data and modeling assumptions for the short- and long-term ATC calculations that are consistent with that used for the planning of operations and system expansion, respectively, to the maximum extent practicable. This includes, for example: (1) load levels, (2) generation dispatch, (3) transmission and generation facilities maintenance schedules, (4) contingency outages, (5) topology, (6) transmission reservations, (7) assumptions regarding transmission and generation facilities additions and retirements, and (8) counterflows. We find that requiring consistency in the data and modeling assumptions used for ATC calculations will remedy the potential for undue discrimination by eliminating discretion and ensuring comparability in the manner in which a transmission provider operates and

	plans its system to serve native load and the manner in which it calculates ATC for service to third parties. The Commission directs public utilities, working through NERC, to modify ATC standards to achieve this consistency. • 293. With regard to EPSA's request for the standardization of additional data inputs, we believe they are already captured in the Commission's proposal as adopted in this Final Rule. Xcel asks the Commission to require consistency in the determination of counterflows in the calculation of ATC. Counterflows are included in the list of assumptions that public utilities, working through NERC, are required to make consistent. We believe that counterflows, if treated inconsistently, can adversely affect reliability and competition, depending on how they are accounted for. Accordingly, we reiterate that public utilities, working through NERC and NAESB, are directed to develop an approach for accounting for counterflows, in the relevant ATC standards and business practices. We find unnecessary Xcel's request that we require a date certain for specific issues in the Western Interconnection to be addressed. Above we require public utilities, working through NERC, to modify the ATC standards within 270 days after the publication of the Final Rule in the Federal Register. • 295. We offer the following clarifications. In response to Southern, we clarify that we require consistent use of assumptions underlying operational planning for short-term ATC and expansion planning for long-term ATC calculation. We also clarify that there must be a consistent basis or approach to determining load levels. For example, one approach may be for transmission providers to calculate load levels using an on- and off-peak model for each month when evaluating yearly service requests and calculating yearly ATC. The same (peak- and off-peak) or alternative approaches may be used for monthly, weekly, daily and hourly ATC calculations. Regardless of the ultimate choice of approach, it is imperative that all transmission providers use the same approach to modeling load levels to enable the meaningful exchange of data among transmission providers. Accordingly, we direct public utilities, working through NERC, to develop consistent requirements for modeling load levels in MOD-001 for the services offered under the pro forma OATT. • 296. With respect to modeling of generation dispatch, we direct public utilities, working through NERC, to develop requirements in NERC's MOD-001 reliability standard specifying how transmission providers shall determine which generators should be modeled in service, including guidance on how independent generation should be considered. We agree with Ameren that any modeling of base generation dispatch must model generators, including merchant generators, as they are expected to run. Accordingly, we direct public utilities, working through NERC, to revise reliability standard MOD-001 by specifying that base generation dispatch will model (1) all designated network resources and other resources that are committed or have the legal obligation to run, as they are expected to run and (2) uncommitted resources that are deliverable within the control area, economically dispatched as necessary to meet balancing requirements. • 297. Regarding transmission reservations modeling, we direct public utilities, working through NERC, to develop requirements in reliability standard MOD-001 that specify (1) a consistent approach on how to simulate reservations from points of receipt to points of delivery when sources and sinks are unknown and (2) how to model existing reservations. • 301. The Commission adopts the NOPR proposal and requires the development of reliability standards that ensure ATC is calculated at consistent intervals among transmission providers. The Commission thus directs public utilities, working through NERC and NAESB, to revise reliability standard MOD-

	001 to require ATC to be recalculated by all transmission providers on a consistent time interval and in a manner that closely reflects the actual topology of the system, e.g., generation and transmission outages, load forecast, interchange schedules, transmission reservations, facility ratings, and other necessary data. This process must also consider whether ATC should be calculated more frequently for constrained facilities. ATC-related requirements for OASIS posting are discussed below. • 310. The Commission adopts the NOPR proposal and directs public utilities, working through NERC, to revise the related MOD reliability standards to require the exchange of data and coordination among transmission providers and, working through NAESB, to develop complementary business practices. The following data shall, at a minimum, be exchanged among transmission providers for the purposes of ATC modeling: (1) load levels; (2) transmission planned and contingency outages; (3) generation planned and contingency outages; (4) base generation dispatch; (5) existing transmission reservations, including counterflows; (6) ATC recalculation frequency and times; and (7) source/sink modeling identification. The Commission concludes that the exchange of such data is necessary to support the reforms requiring consistency in the determination of ATC adopted in this Final Rule. As explained above, transmission providers are required to coordinate the calculation of TTC/TFC and ATC/AFC with others and this requires a standard means of exchanging data. • 338. We adopt EEI's proposal that the Commission revise Attachment C, section 3(f) to replace the word "prove" with the word "demonstrate." The word "demonstrate" more accurately describes the showing we expect the transmission provider to make. We agree that the word "prove" implies a standard of proof that we did not intend to impose. We also acknowledge TVA's comments that the NERC standards drafting team is developing standards that should address "double counting" in ATC calculations in general. However, we require that the information in Attachment C be sufficient to demonstrate that a transmission provider is not double counting CBM in its ATC calculation. • 389. We affirm our statement in the NOPR proposal acknowledging that transfer capability associated with transmission reservations that are not scheduled in real time is required to be made available as non-firm, and posted on OASIS. • 486. The Commission adopts the information exchange principle as to both network and point-to-point transmission customers. Accordingly, we will require transmission providers, in consultation with their customers and other stakeholders, to develop guidelines and a schedule for the submittal of information. In order for the Final Rule's planning process to be as open and transparent as possible, the information collected by transmission providers to provide transmission service to their native load customers must be transparent and, to that end, equivalent information must be provided by transmission customers to ensure effective planning and comparability. We clarify that the information must be made available at regular intervals to be identified in advance. Information exchanged should be a continual process, the frequency of which should be addressed in the transmission provider's compliance filing required by the Final Rule. However, we expect that the frequency and planning horizon will be consistent with ERO requirements. FERC Order 693 Disposition: Not approved or remanded

	• Tied to Order No. 890, in which Commission developed policies to lessen, if not eliminate, opportunities to discriminate against competitive power suppliers in access to the transmission system. • Industry-wide consistency and transparency of all ATC components and methodology. This includes modeling load levels, transmission reservations, and generation dispatch scenarios consistently. • Provide a framework for ATC, TTC, and ETC calculation, developing industry-wide consistency of all ATC components. Three methodologies are expected: contract path ATC, network ATC, and network AFC. • Require disclosure of algorithms for both firm and non-firm ATC and processes used in the calculation. • Identify a detailed list of information to be exchanged among transmission providers for the purposes of ATC modeling. • Include a requirement that assumptions used in the ATC and AFC calculations should be consistent with those used for planning the expansion of or operation of the bulk power system. • Require ATC to be updated on a consistent time interval. • Provides predictable and sufficiently accurate, consistent, equivalent, and replicable ATC calculations. • Provides for the conversion of AFC to ATC. • Applicable entities must make available their assumptions and contingencies underlying ATC and TTC calculations. • Focus of ATC/AFC with this standard; FAC-012-1 should focus on TTC/TFC. • Identify applicable entities in terms of users, owners, and operators of the bulk power system. Fill-in-the-Blank Team Comments • R1 contains regional reference V0 Industry Comments • Delete – NAESB business • Delete 'in conjunction with members' as not part of NERC's concern • List those not required to post ATC • Need to include BA • Clarify R.1.7 Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC/NAESB Coordination • The SDT should review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Firm Transmission Service Network Integration Transmission Service Non-Firm Transmission Service Open Access Same-time Information System Point-to-Point Transmission Service Transmission Customer

<table>
<tr><th colspan="3">Issues to be Considered by Drafting Team
Project 2006-07 — Transfer Capabilities (ATC, TTC, CBM, TRM)</th></tr>
<tr><th colspan="2">Standard #</th><th>Title</th></tr>
<tr><td colspan="2">MOD-002-0</td><td>Review of Transmission Service Provider Total Transfer Capability and Available Transfer Capability Calculations and Results</td></tr>
<tr><td>Issues</td><td colspan="2">FERC Order 693
Disposition: Not approved or remanded

V0 Industry Comments
• Should be with NAESB
• Should be in conjunction with BA
• Evidence = mail receipt

Other
• Modify standard to conform to the latest version of NERC’s Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

NERC/NAESB Coordination

• The SDT should review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB:

Firm Transmission Service
Network Integration Transmission Service
Non-Firm Transmission Service
Open Access Same-time Information System
Point-to-Point Transmission Service
Transmission Customer</td></tr>
</table>

Issues to be Considered by Drafting Team Project 2006-07 — Transfer Capabilities (ATC, TTC, CBM, TRM)	
Standard #	**Title**
MOD-003-0	Regional Procedure for Input on Total Transfer Capability and Available Transfer Capability Methodologies and Values
Issues	FERC Order 693 Disposition: Not approved or remanded • Consider APPA's suggestion that MOD-003 may be redundant and should be eliminated through the standards development process if certain reporting requirements are included in MOD-001. V0 Industry Comments • Need to include BA • Recourse needs to be specified Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC/NAESB Coordination • The SDT should review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Firm Transmission Service Network Integration Transmission Service Non-Firm Transmission Service Open Access Same-time Information System Point-to-Point Transmission Service Transmission Customer

Issues to be Considered by Drafting Team Project 2006-07 Transfer — Capabilities (ATC, TTC, CBM, TRM)	
Standard #	**Title**
MOD-004-0	Documentation of Regional Reliability Organization Capacity Benefit Margin Methodologies
Issues	FERC Order 890 • 212. The Commission also believes that further clarification is necessary regarding the calculation algorithms for firm and non-firm ATC.150 Currently, NERC has no standards for calculating non-firm ATC. We find that the same potential for discrimination exists for non-firm transmission service as for firm service and that greater uniformity in both firm and non-firm ATC calculations will substantially reduce the remaining potential for undue discrimination. Therefore, we direct public utilities, working through NERC, to modify related ATC standards by implementing the following principles for firm and non-firm ATC calculations: (1) for firm ATC calculations, the transmission provider shall account only for firm commitments; and (2) for non-firm ATC calculations, the transmission provider shall account for both firm and non-firm commitments, postbacks of redirected services, unscheduled service, and counterflows. We understand that these principles are currently followed by most transmission providers and believe they should be clearly set forth in the ATC-related reliability standards. As described below, each transmission provider's Attachment C must include a detailed formula for both firm and non-firm ATC, consistent with the modified ATC-related reliability standards. • 256. The Commission concludes that it is appropriate to allow LSEs to retain the option of setting aside transfer capability in the form of CBM to maintain their generation reliability requirement. We agree with commenters that, without CBM, LSEs would have to increase their generation reserve margins by contracting for generation capacity, which may result in higher costs without additional reliability benefits. We require, however, the development of standards for how CBM is determined, allocated across transmission paths, and used in order to limit misuse of transfer capability set aside as CBM. Transmission providers also must reflect the set-aside of transfer capability as CBM in the development of the rate for point-to-point transmission service to ensure comparable treatment for point-to-point to customers. • 257. The Commission therefore adopts a combination of the NOPR options one and two, and declines to adopt option three. First, we require public utilities, working through NERC and NAESB, to develop clear standards for how the CBM value shall be determined, allocated across transmission paths, and used. We understand that NERC has already begun the process of modifying several of the CBM-related reliability standards and that the drafting process is a joint project with NAESB. Second, we require transmission providers to reflect the set-aside of transfer capability as CBM in the development of the rate for point-to-point transmission service. • 259. To ensure CBM is used for its intended purpose, CBM shall only be used to allow an LSE to meet its generation reliability criteria. Consistent with Duke's statement, we clarify that each LSE within a transmission provider's control area has the right to request the transmission provider to set aside transfer capability as CBM for the LSE to meet its historical,

	state, RTO, or regional generation reliability criteria requirement such as reserve margin, loss of load probability (LOLP), the loss of largest units, etc. • 260. We direct public utilities, working through NERC, to develop clear requirements for allocating CBM over transmission paths and flowgates. While we do not mandate a particular methodology for allocating CBM to paths and flowgates, one approach could be based on the location of the outside resources or spot market hubs that an LSE has historically relied on during emergencies resulting from an energy deficiency. • 261. We concur with TAPS' proposal that all LSEs should have access to CBM and meaningful input into how much transfer capability is set aside as CBM. In the transparency section below, we provide detailed requirements regarding availability of documentation used to determine the amount of transfer capability to be set aside as CBM and the posting of CBM values and narratives. Access to this documentation will enable LSEs to validate how much transfer capability is set aside as CBM on each system and provide them with information to question whether the set-aside is consistent with the reliability standards and this Final Rule. • 262. Concerning TAPS' proposal to remove the reservation decision from the sole discretion of transmission providers, we determine that LSEs should be permitted to call for use of CBM, if they do so pursuant to conditions established in the reliability standards development process. We direct public utilities working through NERC to modify the CBM-related standards to specify the generation deficiency conditions during which an LSE will be allowed to use the transfer capability reserved as CBM. In addition, we direct that transmission set aside as CBM shall be zero in non-firm ATC calculations. Finally, we order public utilities to work with NAESB to develop an OASIS mechanism that will allow for auditing of CBM usage. • 273. The Commission also adopts the NOPR proposal to establish standards specifying the appropriate uses of TRM to guide NERC and NAESB in the drafting process. Transmission providers may set aside TRM for (1) load forecast and load distribution error, (2) variations in facility loadings, (3) uncertainty in transmission system topology, (4) loop flow impact, (5) variations in generation dispatch, (6) automatic sharing of reserves, and (7) other uncertainties as identified through the NERC reliability standards development process. Because load, facility loading and other uncertainties constantly deviate, we will not require that TRM set aside capacity be set at zero in the non-firm ATC calculation. In other words, we will not require transfer capability that is set aside as TRM to be sold on a non-firm basis. We find that clear specification in this Final Rule of the permitted purposes for which entities may reserve CBM and TRM will virtually eliminate double-counting of TRM and CBM. • 354. The Commission adopts the CBM posting requirements proposed in the NOPR. In doing so, we amend our OASIS regulations to incorporate the directives established in the CBM Order. Accordingly, we require transmission providers to post (and update) the CBM amount for each path. In addition, the Commission requires transmission providers to make any transfer capability set aside for CBM but unused for such purpose available on a non-firm basis and to post this availability on OASIS. Furthermore, the Commission requires transmission providers to post (and update) the TRM values for the paths on which the transmission provider already posts ATC, TTC, and CBM. • 358. The Commission incorporates into its regulations the requirement in

	the CBM Order for a transmission provider to periodically reevaluate its transfer capability set aside for CBM. With respect to TAPS' concerns over the effort involved in the reevaluation process, we will require CBM studies to be performed at least every year. This requirement is consistent with the CBM Order, in which the Commission stated that the level of ATC set aside for CBM should be reevaluated periodically to take into account more certain information (such as assumptions that may not have, in fact, materialized).204 While changes requiring a reevaluation of CBM are longer-term in nature (e.g., installation of a new generator or a long-term outage), quarterly may be too frequent, though two years may be too long and may prevent a portion of the CBM set aside from being released as ATC. Moreover, annual reevaluation is consistent with the current NERC standard being developed in MOD-005.205 The requirement to evaluate CBM at least every year also is consistent with the CBM Order in that the Commission directed transmission providers to periodically reevaluate their generation reliability needs so as to make known the need for CBM and to post on OASIS their practices in this regard. FERC Order 693 Disposition: Not approved or remanded • Clarify that CBM shall be set aside upon request of any LSE within a balancing area to meet its verifiable historical, state, RTO, or regional generation reliability criteria. • Develop requirements regarding transparency of the generation planning studies used to determine CBM values. • Make clear the process for how CBM is allocated across transmission paths or flowgates. • Add LSE as an applicable entity. • Ensure that CBM, TRM, and ETC cannot be used for the same purpose, e.g. loss of the identical generating unit. • Coordinate with NAESB business practices. • Consider APPA's suggestion that MOD-004 may be redundant and could be eliminated is MOD-002 is modified to include reporting requirements. V0 Industry Comments • Regional coordination missing • RRO members not a NERC issue • Gen. planning criteria not available • Restrictions on TSP unfair Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that

	appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject. NERC/NAESB Coordination • The SDT should review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Firm Transmission Service Network Integration Transmission Service Non-Firm Transmission Service Open Access Same-time Information System Point-to-Point Transmission Service Transmission Customer

Issues to be Considered by Drafting Team Project 2006-07 — Transfer Capabilities (ATC, TTC, CBM, TRM)	
Standard #	**Title**
MOD-005-0	Procedure for Verifying Capacity Benefit Margin Values
Issues	FERC Order 693 • Consider APPA's comment to incorporate MOD-004 and MOD-005 into MOD-006 through the standards development process. V0 Industry Comments • Some systems are exempt and aren't noted here • Relationship between shared reserves & CBM • Remove reference to members Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC/NAESB Coordination • The SDT should review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Firm Transmission Service Network Integration Transmission Service Non-Firm Transmission Service Open Access Same-time Information System Point-to-Point Transmission Service Transmission Customer

<table>
<tr><th colspan="3">Issues to be Considered by Drafting Team
Project 2006-07 — Transfer Capabilities (ATC, TTC, CBM, TRM)</th></tr>
<tr><th colspan="2">Standard #</th><th>Title</th></tr>
<tr><td colspan="2">MOD-006-0</td><td>Procedures for the Use of Capacity Benefit Margin Values</td></tr>
<tr><td>Issues</td><td colspan="2">FERC Order 693
Disposition: Approve with modifications
• Include a requirement that CBM and TRM will not be used for the same purpose.
• CBM should be used for emergency generation deficiencies.
• Modify requirement R1.2 to define generation deficiency based on a specific energy emergency alert level.
• CBM should be zero in the calculation of non-firm ATC.
• Expand applicability section to include entities that use CBM, such as LSEs.

V0 Industry Comments
• CBM is import only
• CBM restrictions unfair and could lead to unreliability

Other
• Modify standard to conform to the latest version of NERC’s Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

NERC/NAESB Coordination
• The SDT should review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB:
Firm Transmission Service
Network Integration Transmission Service
Non-Firm Transmission Service
Open Access Same-time Information System
Point-to-Point Transmission Service
Transmission Customer</td></tr>
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<tr><th colspan="3">Issues to be Considered by Drafting Team
Project 2006-07 — Transfer Capabilities (ATC, TTC, CBM, TRM)</th></tr>
<tr><th colspan="2">Standard #</th><th>Title</th></tr>
<tr><td colspan="2">MOD-007-0</td><td>Documentation of the Use of Capacity Benefit Margin</td></tr>
<tr><td>Issues</td><td colspan="2">FERC Order 693
Disposition: Approve with modifications
• Expand applicability section to include entities that use CBM, such as LSEs.
• Expand applicability section to include balancing authorities as well.

V0 Industry Comments
• Definition required as to who and when to report to

Other
• Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

NERC/NAESB Coordination

• The SDT should review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB:

Firm Transmission Service
Network Integration Transmission Service
Non-Firm Transmission Service
Open Access Same-time Information System
Point-to-Point Transmission Service
Transmission Customer</td></tr>
</table>

Issues to be Considered by Drafting Team Project 2006-07 — Transfer Capabilities (ATC, TTC, CBM, TRM)	
Standard #	**Title**
MOD-008-0	Documentation and Content of Each Regional Transmission Reliability Margin Methodology
Issues	FERC Order 890 • 272. The Commission adopts the NOPR proposal and requires public utilities, working through NERC, to complete the ongoing process of modifying TRM standards MOD-008 and MOD-009. We understand that the standard drafting process is underway as a joint project with NAESB. • 273. The Commission also adopts the NOPR proposal to establish standards specifying the appropriate uses of TRM to guide NERC and NAESB in the drafting process. Transmission providers may set aside TRM for (1) load forecast and load distribution error, (2) variations in facility loadings, (3) uncertainty in transmission system topology, (4) loop flow impact, (5) variations in generation dispatch, (6) automatic sharing of reserves, and (7) other uncertainties as identified through the NERC reliability standards development process. Because load, facility loading and other uncertainties constantly deviate, we will not require that TRM set aside capacity be set at zero in the non-firm ATC calculation. In other words, we will not require transfer capability that is set aside as TRM to be sold on a non-firm basis. We find that clear specification in this Final Rule of the permitted purposes for which entities may reserve CBM and TRM will virtually eliminate double-counting of TRM and CBM. • 275. In addition, we direct public utilities, working through NERC, to establish an appropriate maximum TRM. One acceptable method may be to use a percentage of ratings reduction, i.e., model the system assuming all facility ratings are reduced by a specific percentage. This is a relatively simple method and, if adopted as the reliability standard's method, should not restrict a transmission provider from using a more sophisticated method that may allow for greater ATC without reducing overall reliability. FERC Order 693 Disposition: Not approved or remanded • Include clear requirements for how TRM should be calculated, including a methodology for determining maximum TRM values, and allocated across paths. • Clear requirements for permitted purposes for which TRM can be set aside and used. • Clear requirements for availability of documentation that supports TRM determination. • Expand the applicability to include planning authorities and reliability coordinators. V0 Industry Comments • Exemptions missing • RRO in conjunction with its members is not NERC subject matter Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

	NERC/NAESB Coordination • The SDT should review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Firm Transmission Service Network Integration Transmission Service Non-Firm Transmission Service Open Access Same-time Information System Point-to-Point Transmission Service Transmission Customer

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Project 2006-07 — Transfer Capabilities (ATC, TTC, CBM, TRM)</th></tr>
<tr><th colspan="2">Standard #</th><th>Title</th></tr>
<tr><td colspan="2">MOD-009-0</td><td>Procedure for Verifying Transmission Reliability Margin Values</td></tr>
<tr><td>Issues</td><td colspan="2">FERC Order 693
Disposition: Not approved or remanded

V0 Industry Comments
• Margin values not provided to users

Other
• Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

NERC/NAESB Coordination

• The SDT should review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB:

Firm Transmission Service
Network Integration Transmission Service
Non-Firm Transmission Service
Open Access Same-time Information System
Point-to-Point Transmission Service
Transmission Customer</td></tr>
</table>

Project 2006-08 Transmission Loading Relief

Standards Involved:

IRO-006-3 — Reliability Coordination – Transmission Loading Relief

Research Needed:

None

Brief Description:

This is a project that is carried over from 2006. This project involves a coordinated effort with NAESB to clarify and refine the requirements in the standard and identify which requirements are needed to support reliability and which requirements are needed to support a business practice. A part of this project is to modify the requirements so that the Interchange Distribution Calculator will accept market data, thus eliminating the need for the existing regional differences and to make other necessary modifications as identified by stakeholders.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Coordination with NAESB:

The NAESB Wholesale Electric Quadrant (WEQ) Standards Review Subcommittee (SRS) conducted an analysis of the NERC Reliability Standards Development Plan in order to identify those projects contained in the plan that may be appropriate for the industry, through NAESB, to develop parallel and complementary business practices. Below are NAESB's observations for this project.

Related NAESB WEQ Projects (See NAESB WEQ 2008 Annual plan):

Annual Plan Item 1.a.ii
Annual Plan Item 1.d
Annual Plan Item 2.b.vi

Justification for NAESB consideration:

FERC Order 890

SRS Recommendation:

This project is already covered by current NAESB WEQ projects. NERC should take into consideration WEQ Annual Plan Item 1.d in the development of the NERC Standard. Coordination between NERC and NAESB is in progress.

Standard Development Status:

Project 2006-08 Transmission Loading Relief Web page

Project Schedule:

Project 2006-08 Schedule

Target Completion Date:

Phase 2: third quarter of 2009

Phase 3: first quarter of 2009

Related Links:

Project 2006-08 Roster

Issues to be Considered by Drafting Team Project 2006-08 Transmission Loading Relief	
Standard #	**Title**
IRO-006-3	Reliability Coordination – Transmission Loading Relief
Issues	FERC Order 693 Disposition: Approve with modifications • Include a clear warning that TLR procedures are not appropriate and not effective to mitigate an actual IROL violation. • Identifies the available alternatives to mitigate an IROL violation other than the use of the TLR procedure. Consider the suggestions of MidAmerican and Xcel when developing the modification. • Modify the WECC and ERCOT load relief procedures to ensure consistency with the standard form of the reliability standard including requirements, measures, and levels of non-compliance. Regional Difference to IRO-006: PJM/MISO/SPP Enhanced Congestion Management Disposition: Not Approved or Remanded. • Commission will allow the twelve-month PJM/MISO/SPP field test to conclude before taking further action on the variance. • Instructs the RTOs to continue working with the non-market regions to develop revised seams agreements that allow for equitable and feasible treatment of market flows in the NERC TLR/redispatch process. • Allow the NERC Operating Committee to address the technical merits of netting flow impacts in the interchange distribution calculator. FERC Order 890 • 911. The Commission has determined that modifications to the current planning redispatch requirement and creation of a conditional firm option are both necessary for provision of reliable and non-discriminatory point-to-point transmission service. The planning redispatch and conditional firm options represent different ways of addressing similar problems. They can be used to remedy a system condition that occurs infrequently and prevents the granting of a long-term firm point-to-point service. These options also can be used to provide service until transmission upgrades are completed to provide fully firm service. Planning redispatch involves an ex ante determination of whether out-of-merit order generation resources can be used to maintain firm service. Conditional firm involves an ex ante determination of whether there are limited conditions or hours under which firm service can be curtailed to allow firm service to be provided in all other conditions or hours. As we explain below, both techniques are currently used under certain conditions by transmission providers to serve native load and, hence, it is necessary to make comparable services available to transmission customers in order to avoid undue discrimination. • 1074. We adopt a secondary network curtailment priority to apply for the hours or specific system conditions when conditional firm service is conditional. During nonconditional periods, conditional firm service is subject to pro rata curtailment consistent with curtailment of other

	long-term firm service. Thus, secondary network service and conditional firm service when it is conditional will share the same curtailment priority. Also, there is no conflict with reliability standards because conditional firm service will be subject to pro rata curtailment with all other firm uses of the system once conditional curtailment hours, if that is the option selected, are exhausted. • 1075. The secondary network curtailment priority is appropriate because the customer is paying the long-term firm point-to-point rate and thus should receive the highest non-firm curtailment priority during the conditional curtailment hours or during specified system conditions. Adoption of this curtailment priority overcomes what could otherwise be significant implementation hurdles. It allows for implementation of the service without changes to existing NERC TLR practices. NERC and members of the industry need not undertake the time-consuming and expensive process of establishing a new curtailment priority that is between firm and non-firm service as some commenters requested. Use of this curtailment priority also avoids attendant decisions relating to the method of curtailment that should apply, i.e., pro rata or transactional curtailment, for a quasi-firm curtailment priority. It is also consistent with existing interruption provisions of the pro forma OATT which provide that secondary service cannot be interrupted for economic reasons.659 This is consistent with our determination that conditional firm service when it is conditional is curtailable only to maintain reliable operation of the transmission system. • 1076. We reject EEI's argument that the curtailment priority for conditional firm service is inconsistent with Commission precedent regarding priority non-firm service only for network customers. EEI's argument is inapposite. Long-term firm point-to-point customers taking fully firm service without the conditional firm option do not need access to priority non-firm service as EEI suggests. They have assurance that their service will not be interrupted for economic reasons and will only be curtailed on a comparable basis with network service. This would not be the case for conditional firm customers. We also find that EEI has failed to explain the connection between the conditional firm transmission service and the availability of reliability re-dispatch options, i.e., generators on its system that can ramp up or down in response to a curtailment. We reject Powerex's request that transmission providers be required to show that existing long-term rights are protected. Each addition of a new long-term firm transaction impacts the rights of existing firm customers to some extent. • 1077. We disagree with commenters' suggestion that the NERC IDC must be changed to accommodate conditional firm service. We reiterate that we are not creating a new curtailment priority in this Final Rule. We also disagree that new tags that combine a firm and non-firm priority must be developed in order to implement the conditional firm option. The curtailment priority in a tag can be changed ahead of the operating hour based on a near-term forecast of system conditions.660 We are cognizant that daily and hourly operations to change the tags for conditional firm customers likely involve the need for control room coordination and development of an appropriate tracking process. As the Commission described in the NOPR, new tracking and tagging business practices for this service

	must be developed by each transmission provider. Thus, we are allowing a sufficient period for the development of these business practices, i.e., 180 days from the date of publication of this Final Rule in the Federal Register. As directed above, transmission providers must coordinate with other transmission providers in their regions to develop these tracking and tagging business practices. FERC Order 693 Disposition: Approve with modifications • Include a clear warning that TLR procedures are not appropriate and not effective to mitigate an actual IROL violation. • Identifies the available alternatives to mitigate an IROL violation other than the use of the TLR procedure. Consider the suggestions of MidAmerican and Xcel when developing the modification. • Modify the WECC and ERCOT load relief procedures to ensure consistency with the standard form of the reliability standard including requirements, measures, and levels of non-compliance. V0 Industry Comments • Usage of TLR log questioned • Some inconsistencies with current usage VRF comments • R2.1, .2 & .3 – not a requirement, just a suggested instruction • R6 – redundant Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC/NAESB Coordination • The SDT should review the definition of the following term and coordinate with NAESB so that the definition is consistent between NERC and NAESB: Reallocation

Project 2006-09 Facility Ratings

Standards Involved:

FAC-008-1 — Facility Ratings Methodology
FAC-009-1 — Establish and Communicate Facility Ratings

Research Needed:

None

Brief Description:

The revisions to these two standards will result in a single standard that is responsive to the recommended changes identified in the Standard Issues Forms attached to the SAR.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standard Development Status:

Project 2006-09 Facility Ratings Web page

Project Schedule:

Project 2006-09 Schedule

Target Completion Date:

Fourth quarter of 2008

Related Links:

Project 2006-09 Roster

Issues to be Considered by Drafting Team Project 2006-09 — Facility Ratings	
Standard #	**Title**
FAC-008-1	Facility Ratings Methodology
Issues	FERC Order 693 Disposition: Approve with modifications • Consider EEI's suggestion for having this information available for review upon request of a registered user, owner, and operator as part of the standards development process. • Require transmission and generator facility owners to document underlying assumptions and methods used to determine normal and emergency facility ratings. • Ensure that the methodology chosen is consistent with standards developed in an open process like IEEE or CIGRE. • Consider comments raised by LPPC and MRO as part of the standards development process. • Identify and document the limiting component for all facilities and the increase in rating if that component were no longer the limiting component, i.e. the rating for the second-most limiting component, for facilities associated with an IROL, a limitation of TTC, an impediment to generator deliverability, or an impediment to service in major cities or load pockets. • Consider International Transmission's comments regarding applying this directive only for lines where the conductor itself is not the limiting element as part of the standards development process. • Consider comments from FirstEnergy and MISO that generators will have difficulty determining the increase in ratings due to the next limiting element through the standards development process. • Consider Xcel's comments that an actual test be used by generator operators to determine capabilities as part of the standards development process. • Consider FirstEnergy's comments that compliance with NRC rating methodologies should be assumed to comply with NERC reliability standards as part of the standards development process. • Consider the comments by the Valley Group regarding dynamic line ratings as part of the standards development process. • Add or update the compliance measures in the standard as part of the standards development process. Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2006-09 Facility Ratings	
Standard #	**Title**
FAC-009-1	Establish and Communicate Facility Ratings
Issues	FERC Order 693 Disposition: Approved Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Project 2007-01 Underfrequency Load Shedding

Standards Involved:

PRC-006-0 — Development and Documentation of Regional ULS Program Requirements
PRC-007-0 — Assuring Consistency with Regional UFLS Programs
PRC-009-0 — UFLS Performance Following an Underfrequency Event

Research Needed:

None

Brief Description:

PRC-006 is one of the few reliability standards identified by the Regional Reliability Standards Working Group as a standard that has some requirements that need to be defined by each regional entity in a regional standard.

The standard drafting team (SDT) will work with stakeholders to review PRC-006 and each of the current regional programs developed in accordance with that standard, including any other associated programs and/or requirements related to and contained with the UFLS program documentation. The SDT shall determine which requirements should be continent-wide requirements and which requirements should be included in regional standards.

PRC-007 and PRC-009 have some 'fill-in-the-blank' characteristics, as identified in the Regional Reliability Standards Working Group work plan, which need to be removed. These standards shall be included with PRC-006 for consideration as one or more revised standards as necessary for consistency and clarity of overall program requirements and any other associated programs and/or requirements that affect or impact the UFLS program.

The standard drafting team may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standard Development Status:

Project 2007-01 Underfrequency Load Shedding Web page

Project Schedule:

Project 2007-01 Schedule

Target Completion Date:

Third quarter of 2009

Related Links:

Project 2007-01 Roster

Issues to be Considered by Drafting Team Project 2007-01 — Underfrequency Load Shedding	
Standard #	**Title**
PRC-006-0	Development and Documentation of Regional Reliability Organizations' Underfrequency Load Shedding Programs

Issues	FERC Order 693 Disposition: Not approved or remanded • Transfer responsibility from the regional reliability organization to the regional entity. Fill-in-the-Blank Team Comments • Modify R1 to require each Region to develop a regional standard, and • Determine what elements (if any) of UFLS should be included in the North American standard and what elements should be included in the regional standards. • Development of regional standards needs to be coordinated with Regional entities. Regional entities should begin process for developing regional standards once the drafting team for the North American standard has determined what elements of UFLS should be included in the continent-wide standard and what elements should be included in the regional standards. • PRC-006 will be a continent-wide standard supported by Regional Reliability Standards. • Related PRC-007, PRC-008, and 009. V0 Industry Comments • Not a standalone standard • Who do you submit compliance material to? • Need to define evidence Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

<table>
<tr><th colspan="3">Issues to be Considered by Drafting Team
Project 2007-01 — Underfrequency Load Shedding</th></tr>
<tr><th colspan="2">Standard #</th><th>Title</th></tr>
<tr><td colspan="2">PRC-007-0</td><td>Assuring Consistency of Entity Underfrequency Load Shedding Programs with Regional Reliability Organizations' Underfrequency Load Shedding Program Requirements</td></tr>
<tr><td>Issues</td><td colspan="2">FERC Order 693
Disposition: Approved

Fill-in-the-Blank Team Comments
• Change "program" to "standard" in R1.
• Coordinated with PRC-006.
• The regional procedures need to be converted to a standard to implement this.

V0 Industry Comments
• Need to include RA
• Need to refine levels of non-compliance

Other
• Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000
• In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see:
• FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf)
• NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf),
• FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and
• NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.</td></tr>
</table>

Issues to be Considered by Drafting Team Project 2007-01 — Underfrequency Load Shedding	
Standard #	**Title**
PRC-009-0	Analysis and Documentation of Underfrequency Load Shedding Performance Following an Underfrequency Event

Issues

FERC Order 693
Disposition: Approved

Fill-in-the-Blank Team Comments
- Change "program" to "standard'.
- See issues for PRC-007.

V0 Industry Comments
- Define evidence
- 90 days vs. 30 days
- Exemptions for those with shunt reactors who don't shed load

Other
- Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000
- In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see:
  - FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf)
  - NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf),
  - FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and
  - NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Project 2007-02 Operating Personnel Communications Protocols

Standards Involved:

COM-002-2

Research Needed:

None

Brief Description:

This is a new project that was identified in support of a blackout recommendation #26. This standard will require the use of specific communication protocols, especially for communications during alerts and emergencies. The standard will be applicable to transmission operators, balancing authorities, reliability coordinators, generator operators and distribution providers.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standard Development Status:

Project 2007-02 Operating Personnel Communications Protocols Web page

Project Schedule:

Project 2007-02 Schedule

Target Completion Date:

First quarter of 2009

Related Links:

Project 2007-02 Roster

Issues to be Considered by Drafting Team Project 2007-02 Operating Personnel Communications Protocols	
Standard #	**Title**
COM-002-2	Communications and Coordination
Issues	FERC Order 693 Disposition: Approve with modifications • Establish tightened communication protocols, especially for communications during alerts and emergencies. Establish uniformity to the extent practical on a continent-wide basis. V0 Industry Comments • Voice with generators not required • R1 – include reliability authority • R2 – include sabotage and security • R4 – clarify repeat back requirement with regard to emergency Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Standards Drafting Team Coordinators Meeting • R2 - COM-002-2 Communication and Coordination is being reviewed and revised under both Project 2006-06 Reliability Coordination and Project 2007-02 Operating Personnel Communications Protocols; however, it has been agreed that: • Requirement R1will be addressed by the SDT for Project 2006-06 and • Requirement R2 will be addressed by the SDT for Project 2007-02 Operating Personnel Communications Protocols. • If either part of this agreement is not maintained, COM-002-2 will need revisited. • Requirements R1, R3, R4, and R5 (for coordination in planning time frame) of PRC-001-1 System Protection Coordination are better addressed in COM-002 Communications and Coordination. • (Note: These requirements are being removed from PRC-001 under Project 2007-06 System Protection. If this recommendation is not implemented, PRC-001 will need revisited.) • R4 — COM-001-1 Telecommunications is being reviewed and revised under Project 2006-06 Reliability Coordination; however, it has been agreed that all requirements of COM-001-1 except R4 will be addressed by the SDT for Project 2006-06 and that requirement R4 will be addressed by the SDT for Project 2007-02 Operating Personnel Communications Protocols. If either part of this agreement is not maintained, COM-001-1 will need revisited.

Project 2007-03 Real-time Operations

Standards Involved:

TOP-001-1 — Reliability Responsibilities and Authorities
TOP-002-2 — Normal Operations Planning
TOP-003-0 — Planned Outage Coordination
TOP-004-1 — Transmission Operations
TOP-005-1 — Operational Reliability Information
TOP-006-1 — Monitoring System Conditions
TOP-007-0 — Reporting SOL and IROL Violations
TOP-008-1 — Response to Transmission Limit Violations
PER-001-0 — Operating Personnel Responsibility and Authority

Research Needed:

Operating Committee study of situational awareness tools

Brief Description:

Most of the requirements in this set of standards were translated from Operating Policies as part of the Version 0 process. There have been suggestions for improving these requirements, and the drafting team will consider comments submitted by stakeholders, drafting teams and FERC in determining what changes should be proposed to stakeholders.

The drafting team will review all of the requirements in this set of standards and make a determination, with stakeholders, on whether to:

- Move the requirement (into another SAR or Standard or to the certification process or standards)
- Eliminate the requirement (either because it is redundant or because it does not support bulk power system reliability).
- Improve clarity of, improve measurability of, and remove ambiguity from the remaining requirements
- Bring the set of standards into conformance with the latest version of the Reliability Standards Development Procedure and the ERO Sanctions Guidelines.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standard Development Status:

Project 2007-03 Real-time Operations Web page

Project Schedule:

Project 2007-03 Schedule

Target Completion Date:

Third quarter of 2009

Related Links:

Project 2007-03 Roster

Issues to be Considered by Drafting Team Project 2007-03 — Real-time Operations	
Standard #	**Title**
TOP-001-1	Reliability Responsibilities and Authorities
Issues	FERC Order 693 Disposition: Approve with modifications • Clarify the definition of "emergency" and define the criteria for entering into the various states. Also define the authority for declaring these states. • Consider Santa Clara's comments on requirements R7.2 and R7.3 on transmission operator notification requirements as part of the standards development process. • Includes measures and levels of non-compliance for requirement R8 • Consider adding other measures and levels of non-compliance. V0 Industry Comments • Define emergency • Need to expand included entities • What is 'clear decision making authority'? • Need to define single, central communications point during emergencies • Some emergencies will require follow up notification as opposed to immediate Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • Does this imply that a GOP can call another GOP and request an output change without going through the RC, BA or TOP?

Issues to be Considered by Drafting Team Project 2007-03 — Real-time Operations	
Standard #	**Title**
TOP-002-2	Normal Operations Planning
Issues	FERC Order 693 Disposition: Approve with modifications • Delete references to confidentiality in requirements R3 and R4. • Address critical energy infrastructure confidentiality as part of the routine standard development process. • Next-day analysis for all IROLs must identify and communicate control actions to system operators that can be implemented within 30 minutes following a contingency. • Requires next-day analysis of minimum voltages at nuclear power plants auxiliary power buses. • Inform the nuclear plant operator in real-time if the auxiliary power bus voltages cannot be maintained. • Requires simulation contingencies to match what will actually happen in the field. • Consider the comments of ISO-NE and the NRC with respect to requirement R12 and measure M7 as part of the standard development process. Fill-in-the-Blank Team Comments • Remove "in accordance with NERC, Regional Reliability Organization, sub regional, and local reliability requirements" from R6 and "in accordance with filed tariffs and/or regional Total Transfer Capability and Available Transfer Capability calculation processes" from R12. V0 Industry Comments • Limit of 2 tests per year • Coordination of planning required • Reliability should 'trump' confidentiality • Define 'without intentional delay' • Define N-1 VRF comments • R2 – administrative in nature, not a real requirement • R9 – related to INT-003 • R14 & 14.1 – ambiguous Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Standards Drafting Team Coordinators Meeting • Requirements R2, R5, and R6 (for coordination in real-time) of PRC-001-1 System Protection Coordination are better addressed in the TOP family of standards: • Consider putting R5 of PRC-001-1 in: TOP-002 R1, R3, R4, or R5 or

	TOP-003 – R1, R3, R4 • (Note: These requirements are being removed from PRC-001 under Project 2007-06 System Protection. If this recommendation is not implemented, PRC-001 will need revisited.) FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Issues to be Considered by Drafting Team Project 2007-03 — Real-time Operations	
Standard #	**Title**
TOP-003-0	Planned Outage Coordination
Issues	FERC Order 693 Disposition: Approve with modifications • Communicate scheduled outages to all affected entities well in advance to ensure reliability and accuracy of ATC calculations. • Incorporate an appropriate lead time for planned outages using suggestions from the various commenters. • Consider TVA's suggestion for including breaker outages within the meaning of facilities that are subject to advance notice for planned outages. • Require any facility, that in the opinion of the reliability coordinator, balancing authority, or transmission operator, will have a direct impact on the reliability of the bulk power system be subject to the requirement R1 for planned outage coordination. V0 Industry Comments • Submit outage data ASAP but no later than noon day ahead • RA can't request outage cancellation • Outage information needed sooner than 1 day prior VRF comments • R4 – poorly written Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Standards Drafting Team Coordinators Meeting • Requirements R2, R5, and R6 (for coordination in real-time) of PRC-001-1 System Protection Coordination are better addressed in the TOP family of standards: • Consider putting R5 of PRC-001-1 in: TOP-002 R1, R3, R4, or R5 or TOP-003 – R1, R3, R4 • Consider putting R6 of PRC-001-1 in: TOP-003 R5 or TOP-006 • (Note: These requirements are being removed from PRC-001 under Project 2007-06 System Protection. If this recommendation is not implemented, PRC-001 will need revisited.)

Issues to be Considered by Drafting Team Project 2007-03 — Real-time Operations	
Standard #	**Title**
TOP-004-1	Transmission Operations
Issues	FERC Order 693 Disposition: Approve with modifications • Modify requirement R4 to state that the system should be restored to respect proven limits as soon as possible taking no more than 30 minutes. • Defines high risk conditions under which the system must be operated to respect multiple outages in requirement R3. • Consider Santa Clara's comments regarding changes to requirement R2 in the standards development process. • Perform a survey of the prevailing operating practices and actual operating experiences surrounding IROL limits. • Reliability coordinators should report any IROL violations to NERC on a monthly basis for one year beginning August 2, 2007. • NERC should report the results of the survey to the Commission within 18 months of the effective date of this rule. V0 Industry Comments • Clarify roles • Define SOL & IROL • Operations should conform to planning standards • Vagueness in application of IROL limits • Specify disconnection as acceptable in R5 • Define (or remove) practical Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit Observation Team • R4. - Transmission operator enters an unknown state. What does this mean?

Issues to be Considered by Drafting Team Project 2007-03 — Real-time Operations	
Standard #	**Title**
TOP-005-1	Operational Reliability Information
Issues	FERC Order 693 Disposition: Approve with modifications • Include information about the operational status of special protection systems and power system stabilizers in Attachment 1. • Delete references to confidentiality agreements but ensure critical energy infrastructure confidentiality is addressed in the standards development process. • Consider FirstEnergy's modifications to Attachment 1 and ISO-NE's recommended revision to requirement R4 in the standards development process. V0 Industry Comments • Need to include GO & LSE • Data update is too slow • Generator data should include voltage control & stabilizers • GO needs to supply data to BA & TO Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Standards Drafting Team Coordinators Meeting • Requirements R2, R5, and R6 (for coordination in real-time) of PRC-001-1 System Protection Coordination are better addressed in the TOP family of standards: • Consider putting R2 of PRC-001-1 in TOP-005 • (Note: These requirements are being removed from PRC-001 under Project 2007-06 System Protection. If this recommendation is not implemented, PRC-001 will need revisited.)

Issues to be Considered by Drafting Team Project 2007-03 — Real-time Operations	
Standard #	**Title**
TOP-006-1	Monitoring System Conditions
Issues	FERC Order 693 Disposition: Approve with modifications • Add requirement related to the provision of minimum capabilities that are necessary to enable operators to deal with real-time situations and to ensure reliable operation of the bulk power system. • Clarify the meaning of "appropriate technical information" concerning protective relays. • Consider APPA's comments regarding missing measures in the standards development process. V0 Industry Comments • GO needs to provide normal & emergency data • Monitor frequency at multiple points • Need to match roles with FM • Load forecasting data required VRF comments • R1, 1.1, 1.2 – 'available in emergency situation' may be needed • R3 – define appropriate • R4 – What information is required and what is a load pattern? Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Standards DT Coordinators Meeting 20080520 • Requirements R2, R5, and R6 (for coordination in real-time) of PRC-001-1 System Protection Coordination are better addressed in the TOP family of standards: • Consider putting R6 of PRC-001-1 in: TOP-003 R5 or TOP-006 • (Note: These requirements are being removed from PRC-001 under Project 2007-06 System Protection. If this recommendation is not implemented, PRC-001 will need revisited.)

Issues to be Considered by Drafting Team Project 2007-03 — Real-time Operations	
Standard #	**Title**
TOP-007-0	Reporting System Operating Limit (SOL) and Interconnection Reliability Operating Limit (IROL) Violations
Issues	FERC Order 693 Disposition: Approved • Eliminate overlapping matters in TOP-007 and TOP-008. • Consider the NRC's comments on voltage requirements as part of the standards development process. V0 Industry Comments • Not enforceable with current criteria • RA should be included • More of a compliance issue than an true standard • Need to tighten the non-compliance terms • Need to define evidence of evaluation Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2007-03 — Real-time Operations		
Standard #	**Title**	
TOP-008-1	Response to Transmission Limit Violations	
Issues	FERC Order 693 Disposition: Approved • Consider APPA's comments regarding missing measures in the standards development process. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	

Issues to be Considered by Drafting Team Project 2007-03 — Real-time Operations	
Standard #	**Title**
PER-001-0	Operating Personnel Responsibility and Authority
Issues	FERC Order 693 Disposition: Approved V0 Industry Comments • Data retention should be 1 year Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Project 2007-04 Certifying System Operators

Applicable Standards:

PER-003-0 — Operating Personnel Credentials

Research Needed:

None

Brief Description:

This Version 0 Standard requires the Reliability Coordinator, Balancing Authority and Transmission Operator to staff its real-time operating positions with personnel that have a NERC certification credential.

The standard will be revised to address the directives from FERC Order 693 and industry comments from Version 0.

The standard will also be revised to conform to the latest version of the Reliability Standards Development Procedure and the ERO Sanctions Guidelines. The standard drafting team will apply the Reliability Standard Review Guidelines when modifying the standard.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project 2007-04 Certifying System Operators Web page

Project Schedule:

Project 2007-04 Schedule

Target Completion Date:

Third quarter of 2009

Related Links:

Project 2007-04 Roster

Issues to be Considered by Drafting Team Project 2007-04 — Certifying System Operators	
Standard #	**Title**
PER-003-0	Operating Personnel Credentials
Issues	FERC Order 693 Disposition: Approve with modifications • Specify the minimum competencies that must be demonstrated to become and remain a certified operator. • Identify the minimum competencies operating personnel must demonstrate to be certified. • Consider grandfathering certification requirements for transmission operator personnel as part of the standards development process. V0 Industry Comments • Non-compliance levels missing • Need to define 'current' • Need to specify exact position titles and match to credentials • Problem with wording change from 'both' to 'either' • Need to define critical tasks • Staffing plan is out of scope Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • Who needs to be certified?

Project 2007-05 Balancing Authority Controls

Standards Involved:

BAL-002-0 — Disturbance Control Performance
BAL-004-0 — Time Error Correction
BAL-005-1 — Automatic Generation Control
BAL-006-1 — Inadvertent Interchange

Research Needed:

None

Brief Description:

The standard drafting team will:

- Work collaboratively with NAESB to ensure that the elements of these standards that are need to support reliability are include in the revised standard
- Consider comments receive during the initial development of this set of standards and other comments received from ERO regulatory authorities and stakeholders
- Bring the standards into conformance with the latest version of the Reliability Standards Development Procedure and the ERO Rules of Procedures
- Incorporate language to eliminate two interpretations (BAL-005, Requirement 17)
- Incorporate language to make permanent the Urgent Action removal of some of the reliability coordinator's requirements in BAL-004
- Review all of the requirements in the standards listed above.

For each existing requirement, the standard drafting team will also work with NAESB and stakeholders to:

- Eliminate redundancy (or overlap) in the requirements and associated business practices
- Identify requirement that should be moved into other SARs, standards, or business practices
- Eliminate requirements that do not support bulk power reliability
- Improve clarity of, improve measurability of, and remove ambiguity from the remaining requirements

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Coordination with NAESB:

The NAESB Wholesale Electric Quadrant (WEQ) Standards Review Subcommittee (SRS) conducted an analysis of the NERC Reliability Standards Development Plan in order to identify those projects contained in the plan that may be appropriate for the industry, through NAESB, to develop parallel and complementary business practices. Below are NAESB's observations for this project.

Related NAESB WEQ Projects (See NAESB WEQ 2008 Annual plan):
Annual Plan Item 1
Annual Plan Item 6.b

Provisional Item 5

Justification for NAESB consideration:

FERC Order 693
Project Description

SRS Recommendation:

During initial discussions (REF: Rae McQuade's letter to Gerry Adamski dated February 11, 2008), there was no identified need for business practices related to this project. NERC should point out any areas where they see a need for a business practice. This should be coordinated with the WEQ on current project Annual Plan Item 6.b.

Standards Development Status:

Project 2007-05 Balancing Authority Controls Web page

Project Schedule:

Project 2007-05 Schedule

Target Completion Date:

TBD

Related Links:

Project 2007-05 Roster

Issues to be Considered by Drafting Team Project 2007-05 — Balancing Authority Controls	
Standard #	**Title**
BAL-002-0	Disturbance Control Performance
Issues	FERC Order 693 Disposition: Approved with modifications • Modify to make requirements R4.2 and R6.2 refer to NERC rather than the NERC Operating Committee. • Substitute regional entity for regional reliability organization <u>Including Demand-Side Management as a Resource</u> • Include a requirement that explicitly provides that DSM may be used as a resource for contingency reserves. • DSM should be treated on a comparable basis and must meet similar technical requirements as other resources providing this service <u>Continent-wide Contingency Reserve Policy</u> • Include a continent-wide contingency reserve policy, which should include uniform elements (definitions and requirements) • Policy can allow for regional differences, but should include procedures to determine the appropriate mix of operating reserves, spinning and non-spinning, as well as requirements pertaining to the specific amounts of operating reserves based on the load characteristics and magnitude, topology, and mix of resources in the region. <u>Disturbance Control Standard and the Associated Reserve Requirement</u> • Address Commission concerns about having enough contingency reserves to respond to an event on the system in requirement 3.1 and how such reserves are measured. • Requires any single reportable disturbance that has a recovery time of 15 minutes or longer be reported as a violation. • Define a significant (frequency) deviation and a reportable event, taking into account all events that have an impact on frequency, and how balancing authorities should respond. • Include a frequency response requirement. • Measures should be available in real-time to balancing authorities. Fill-in-the-Blank Team Comments • Modify R2 to remove reference to "sub-Regional Reliability Organization or Reserve Sharing Group", and • Determine what elements of contingency reserve should be included in the North American standard and what elements should be included in the regional standard. • Development of regional standards needs to be coordinated with Regional entities. Regional entities should begin process for developing regional standards once the drafting team for the North American standard has determined what elements of contingency reserve should be included in the continent-wide standard and what elements should be included in the regional standards. • Regional reliability standards will be developed in support of North American standard BAL-002. • Each RRO will need to create a regional standard specifying its

	Contingency Reserve policy. V0 Industry Comments • Modify R2 • Determine N. America vs. regional elements • Need regional standards in support of N. American Standards Process • Incorporate approved formal interpretation Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • R2 — What is a sub-region • R2 — Should the reserve sharing group be audited or the members? This should be tied to registration for consistency. NERC/NAESB Coordination • The SDT should review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Frequency Bias Setting Time Error Time Error Correction

Issues to be Considered by Drafting Team Project 2007-05 — Balancing Authority Controls		
Standard #	**Title**	
BAL-004-0	Time Error Correction	
Issues	FERC Order 693 Disposition: Approved with modifications • Include levels of non-compliance and additional measures for requirement R3. • In the five-year review cycle of the standard, perform research that would provide a technical basis for the present or any alternative approach that is more effective and helps reduce inadvertent interchange. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC/NAESB Coordination • The SDT should review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Frequency Bias Setting Time Error Time Error Correction	

Issues to be Considered by Drafting Team Project 2007-05 — Balancing Authority Controls	
Standard #	**Title**
BAL-005-1	Automatic Generation Control
Issues	FERC Order 693 Disposition: Approved with modifications • Develop a process to calculate the minimum regulating reserve for a balancing authority, taking into account expected load and generation variation and transactions being ramped in and out. • Change title to be neutral as to the source of regulating reserves and allows the inclusion of technically qualified DSM. • If regulation is being provided over non-firm transmission service, the entity receiving the regulation must have a back-up plan to include the loss of the non-firm transmissions service as referenced in requirement R5. • Address comments of Xcel and FirstEnergy when the standard is revisited in the work plan. • Include a measure that provides for a verification process over the required automatic generation control, or regulating reserves a balancing authority maintains V0 Industry Comments • Purpose statement • Re-order & re-word requirements • Define data requirements • Non-compliance missing VRF comments • R12 - sub-requirements should be separate requirements • R12.3 – redundant • R14 - Check for redundancy of second statement. This seems to be a real-time requirement - not planning. Is this for archival data requirements? Standards Process • Incorporate approved formal interpretation Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • What the difference between BAL-005-0 and BAL-005-1? FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a

	"reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject. NERC/NAESB Coordination • The SDT should review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Frequency Bias Setting Time Error Time Error Correction

Issues to be Considered by Drafting Team Project 2007-05 — Balancing Authority Controls	
Standard #	**Title**
BAL-006-1	Inadvertent Interchange
Issues	FERC Order 693 Disposition: Approved with modifications • Add measures concerning the accumulation of large inadvertent interchange balances and levels of non-compliance. • Examine the WECC time error correction procedure as a possible guide. Regional Differences to BAL-006-1: Inadvertent Interchange Accounting and Financial Inadvertent Settlement Disposition: Approved with modifications • Reference the current reliability standards and are in the standard form, which includes requirements, measures, and levels of non-compliance. • Explore FirstEnergy's request to define the function of a waiver in the reliability standard development process. V0 Industry Comments • Purpose/Requirement contradiction • Split requirements • Wording in R4 • Requirements mixed in Compliance • Non-compliance missing Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC/NAESB Coordination • The SDT should review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Frequency Bias Setting Time Error Time Error Correction

Project 2007-06 System Protection Coordination

Standards Involved:

PRC-001-1 — System Protection Coordination

Research Needed:

Identification of criteria for determining where to install protection systems

Brief Description:

The existing PRC-001 Standard has been identified in the Reliability Standards Development Plan as requiring revision, within the FERC Order 693 as requiring revisions, and by a SPCTF report (attached) which identified a number of issues with the existing standard (the SPCTF report, which precedes FERC Order 693, also includes observations from the preceding FERC NOPR on RM-06-16-000). This revision of PRC-001 should address concerns from these sources and should include upgrades to bring the revised standard into conformance with the latest version of the ERO Rules of Procedure.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project 2007-06 System Protection Web page

Project Schedule:

Project 2007-06 Schedule

Target Completion Date:

Second quarter of 2010

Related Links:

Project 2007-06 Roster

Issues to be Considered by Drafting Team Project 2007-06 — System Protection Coordination	
Standard #	**Title**
PRC-001-1	System Protection Coordination
Issues	FERC Order 693 Disposition: Approve with modifications • Clarify the term "corrective action". • Consider FirstEnergy's and the California PUC's comments about the maximum time for corrective actions in the standards development process. • Upon detection of failures in relays or protection system elements on the bulk power system that threaten reliability, relevant transmission operators must be informed promptly, but within a specified period of time. • Once informed, transmission operators must carry out corrective control actions that return the system to a stable state that respects system requirements as soon as possible and no longer than 30 minutes. • Measures and levels of non-compliance incorrectly reference non-existent requirements. V0 Industry Comments • Effects on reliability may not be known • Consistent terminology as to neighbor vs. affected • Not all criteria moved over from policies Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Project 2007-07 Vegetation Management

Standards Involved:

FAC-003-1 — Vegetation Management Program

Research Needed:

None

Brief Description:

This is a Version 1 standard that was approved in 2006. It has some 'fill-in-the-blank' components to eliminate. In addition, the following comments submitted by FERC and stakeholders need to be addressed in the refinement of the standard:

FERC Order 693 items

Address the issue regarding applicability:

- Work with the reliability entities and the ERO to collect and make available to the FERC, a list of critical lower voltage transmission lines. (Refer to Applicability 4.3 section of the standard.)
- Consider other criteria in determining applicability of the standard to sub 200kV lines.

Address the issue of clearances for lines on both federal and non-federal lands:

- Review and analyze outage data (collected by the ERO) then consider defining clearances needed to avoid sustained vegetation-related outages that would apply to transmission lines crossing both federal and non-federal land.
- Consider revising the definition of right of way to encompass required clearance areas.
- Review the suitability of IEEE 516-2003 standard for minimum vegetation clearance.

Procedural items

- Re-format standard to bring it into conformance with the latest version of the Reliability Standard Development Procedure and the ERO Sanctions Guidelines.
- Remove references to RRO in the standard and substitute a responsible entity.
- Add newly developed compliance elements such as time horizons, violation risk factors, violation severity levels, etc.

Stakeholder items

- Prepare technical reference material such as a "white paper" to aid in understanding the technical basis for the standard.
- Review reporting criteria for Category 3 outages in the proposed technical reference material and may remove the reporting requirement of Category 3 outages in R.3 and R.4.
- Consider deleting requirement R.4.
- Review the reporting exemptions to include all category outages under major disasters in Requirement R3.2.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project 2007-07 Vegetation Management Web page

Project Schedule:

Project 2007-07 Schedule

Target Completion Date:

First quarter of 2009

Related Links:

Project 2007-07 Roster

Issues to be Considered by Drafting Team Project 2007-07 — Vegetation Management	
Standard #	**Title**
FAC-003-1	Transmission Vegetation Management Program
Issues	FERC Order 693 Disposition: Approved with modifications • Address the issue of "bright-line" applicability of 200 kV and above through the standards development process. • Incorporate suggestions to include facilities at lower voltages that are associated with IROLs. • Evaluate suggestions by LPPC, APPA, and Avista in the standards development process. • Consider a phase-in timeframe if lower voltage facilities are included as applicable to this standard. • Develop compliance audit procedures, using industry experts, which would identify appropriate inspection cycles based on local factors. • Ensure inspection cycles and vegetation management requirements are properly met by the responsible entities. • Define the minimum clearance needed to avoid sustained vegetation-related outages that apply to line crossing federal and non-federal lands. • Address issues that develop in the interim on a case-by-case basis. • Collect outage data for transmission outages of lines that cross both federal and non-federal lands, analyze it, and use the results to develop a standard that would apply to both federal and non-federal lands. • Address FirstEnergy's suggestion to clarify the definition of "rights-of-way" as part of the standards development process. V0 Industry Comments • RA vs. RRO • Too weak on compliance • Format inconsistencies Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • It was pointed out that an entity did not need to be registered as a TO for FAC-003-1 to apply to them, only that they have transmission lines operated at 200 kV and above. This could include radial lines as well as generation leads at the 200kV and above level. This could mean functions other than TO would require FAC-003-1 to be in the audit scope. How are you looking at the applicability of FAC-003-1 as it applies to DPs, LSEs, and GOs etc. This could be applicable to many entities registered in multiple regions • With regards to the vegetation management standard, what type of event would trigger a compliance investigation? • TO's shall demonstrate compliance through self certification. Compliance monitoring shall conduct an on-site audit every five years or more frequently as deemed appropriate. Does this over-ride the six year audit cycle for TO's?

Project 2007-09 Generator Verification

Standards Involved:

PRC-019-1 — Coordination of Generator Voltage Regulator Controls with Unit Capabilities and Protection

PRC-024-1 — Generator Performance During Frequency and Voltage Excursions

MOD-024-1 — Verification of Generator Gross and Net Real Power Capability

MOD-025-1 — Verification of Generator Gross and Net Reactive Power Capability

MOD-026-1 —Verification of Models and Data for Generator Excitation System Functions

MOD-027-1 — Verification of Generator Unit Frequency Response

Research Needed:

None

Brief Description:

The scope of this project includes:

- Modifying the six standards associated with this project so they conform to the latest version of NERC's Reliability Standards Development Procedure and the ERO Rules of Procedure,
- Replacing the "fill-in-the-blank" requirements assigned to the Regional Reliability Organization with requirements that can be applied on a continent-wide basis and are assigned to users, owners or operators of the bulk power system,
- Considering and addressing issues identified in FERC orders, including the modifications to MOD-024-1 and MOD-025-1 as proposed in FERC Order 693, and
- Considering and addressing issues identified during Phase III & IV field testing.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project 2007-09 Generator Verification Web page

Project Schedule:

Project 2007-09 Schedule

Target Completion Date:

Third quarter of 2009

Related Links:

Project 2007-09 Roster

Issues to be Considered by Drafting Team Project 2007-09 — Generator Verification		
Standard #		**Title**
PRC-019-1		Coordination of Generator Voltage Regulator Controls with Unit Capabilities and Protection
Issues	Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	

Issues to be Considered by Drafting Team Project 2007-09 — Generator Verification		
Standard #		**Title**
PRC-024-1		Generator Performance During Frequency and Voltage Excursions
Issues	Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	
Misc. Items		Compliance missing. Phase III/IV field test.

Issues to be Considered by Drafting Team Project 2007-09 — Generator Verification	
Standard #	**Title**
MOD-024-1	Verification of Generator Gross and Net Real Power Capability
Issues	FERC Order 693 Disposition: Not Approved or Remanded. • Require users, owners, and operators of the system to provide this information. • Document test conditions and the relationships between test conditions and generator output so that the amount of power that can be expected to be delivered from a generator at different conditions can be determined. • Clarify requirement R2 that specifies that the regional reliability organization shall provide generator gross and net real power capability verification within 30 calendar days of approval. The confusion centers on "approval" and when the 30-day period starts. • Provide a work plan and compliance filing regarding the collection of information specified for standards that are deferred. Fill-in-the-Blank Team Comments • Review MOD-024 and MOD-025 concurrently to transition to uniform North American standards. • Remove the fill-in-the-blank aspects (correct reference to "… Regional Reliability Organization's procedures…"). • Goal is uniform North American standards for real and reactive power verification. Look at regional requirements and identify the best practice, commonalities and differences, and whether differences are needed for reliability. Phase III/IV comments • No requirement for the RRO to demonstrate that its procedures result in accurate information of gross and net real power capability of generators for steady state models • It is not clear in R3 to whom the Generator Owner will report the information. • Non compliance levels are too strict. A small utility with 15-20 units will be L4 non-compliant if they miss one unit Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2007-09 — Generator Verification	
Standard #	**Title**
MOD-025-1	Verification of Generator Gross and Net Reactive Power Capability
Issues	FERC Order 693 Disposition: Not Approved or Remanded. • Require verification of reactive power capability at multiple points over a unit's operating range. • Clarify requirement R2 that specifies that the regional reliability organization shall provide generator gross and net reactive power capability verification within 30 calendar days of approval. The confusion centers on "approval" and when the 30-day period starts. • Provide a work plan and compliance filing regarding the collection of information specified for standards that are deferred. Fill-in-the-Blank Team Comments • Review MOD-024 and MOD-025 concurrently to transition to uniform North American standards. • Remove the fill-in-the-blank aspects (correct reference to "… Regional Reliability Organization's procedures…"). • Refer to MOD-024. Phase III/IV comments • These standards do not provide for uniform testing of generator capability. The determination of which units are tested, how frequently they are tested, and the criteria used for determining capability are left to individual regions. • Fundamental guidelines outlining some basic requirements (e.g., all units over 20 MW shall be tested annually under conditions that permit full net output of the unit for normal operation) are lacking. • There is no clear reason for regional variations in capability testing. A generator in Georgia does not have more or less capability than an identical unit applied across the Florida line, despite the fact that one is in SERC and the other in FRCC. • R1.5.1: The benefit of verifying maximum capability of generators to absorb VArs at seasonal real power generation capability is unclear, particularly if this standard applies to virtually all generators. For the vast majority of units, the need to absorb VArs occurs during low-load conditions, when unit real power production is below maximum capability and the unit's ability to absorb VArs is greater. Therefore, the single datum for unit VAr absorption capability determined pursuant to this standard seems to be of little practical use, except for relatively few generators in a limited set of circumstances. • It is not clear in R3 to whom the Generator Owner will report the information. • Non compliance levels are too strict. A small utility with 15-20 units will be L4 non-compliant if they miss one unit. • Severity of non-compliance should be based on the percentage of the generator owner's total generation capability comprised of units required to be verified, rather than on the percentage (number) of

	generating units. Exempt units should be excluded from the total generation capability for determining level of non-compliance. Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2007-09 — Generator Verification		
Standard #		**Title**
MOD-026-1		Verification of Models and Data for Generator Excitation System Functions
Issues	Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	
Misc. Items		Compliance missing. Phase III/IV field test.

Issues to be Considered by Drafting Team Project 2007-09 — Generator Verification		
Standard #		**Title**
MOD-027-1		Verification of Generator Unit Frequency Response
Issues	Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	
Misc. Items		Compliance missing. Phase III/IV field test.

Project 2007-11 Disturbance Monitoring

Standards Involved:

PRC-002-1 — Define and Document Disturbance Monitoring Equipment Requirements
PRC-018-1 — Disturbance Monitoring Equipment Installation and Data Reporting

Research Needed:

None

Brief Description:

PRC-002 and PRC-018 were approved in 2006.
PRC-002 is one of four reliability standards identified by the Regional Reliability Standards Working Group as a standard that has some requirements that need to be defined by each regional entity in a regional standard. The standard drafting team (SDT) will review PRC-002 and each of the current regional programs developed in accordance with that standard, including any other associated programs and/or requirements related to or contained with the disturbance monitoring program documentation. The SDT shall determine which requirements should be continent-wide requirements and which requirements should be included in regional standards.

When revising PRC-002 and PRC-018 the SDT shall address issues already identified by FERC, other drafting teams and stakeholders. Note: Phasor measurement networks are to be addressed by Project 2008-06.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project 2007-11 Disturbance Monitoring Web page

Project Schedule:

Project 2007-11 Schedule

Target Completion Date:

Second quarter of 2009

Related Links:

Project 2007-11 Roster

Issues to be Considered by Drafting Team Project 2007-11 — Disturbance Monitoring	
Standard#	**Title**
PRC-002-1	Define Regional Disturbance Monitoring and Reporting Requirements
Issues	FERC Order 693 Disposition: Not Approved or Remanded. • Consider if greater consistency can be achieved in the standard as suggested by Otter Tail, APPA, and Alcoa. V0 Industry Comments • More specificity in equipment requirements needed • IDWG identified deficiencies • Digital inputs and load need to be added Phase III/IV comments • There is no criteria that the RROs must use in specifying the process for identifying locations where DMEs are required VRF comment • R1 - This standard and all related sub requirements are after the fact data analysis. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2007-11 — Disturbance Monitoring	
Standard#	**Title**
PRC-018-1	Disturbance Monitoring Equipment Installation and Data Reporting
Issues	FERC Order 693 Disposition: Approved Fill-in-the-Blank Team Comments • Determine what elements (if any) of disturbance monitoring should be included in the North American standard and what elements should be included in the regional standards. • Development of regional standards needs to be coordinated with Regional entities. Regional entities should begin process for developing regional standards once the drafting team for the North American standard has determined what elements of disturbance monitoring should be included in the continent-wide standard and what elements should be included in the regional standards. • PRC-002 will be a continent-wide standard supported by Regional Reliability Standards. • PRC-002 is directly related to PRC-018. PRC-018 requires the functional entities to comply with the requirements developed by each RRO. • Need regions to develop and submit regional standards. NERC standard requires region to have this done in 9 months from board adoption (from August 9). Regions need to do this as a regional standard, not a procedure or some other document. VRF comments • R3.4, 3.5, 3.6, 3.7 – Ambiguous Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Project 2007-12 Frequency Response

Standards Involved:

New Standard

Research Needed:

None

Brief Description:

This project involves developing a new standard for the collection of data needed to accurately model existing Frequency Response within each interconnection.

The project will support the following directive in FERC Order 693:

- Define the necessary amount of Frequency Response needed for Reliable Operation for each balancing authority with methods of obtaining and measuring that the frequency response is achieved.

Standards Development Status:

Project 2007-12 Frequency Response Web page

Project Schedule:

Project 2007-12 Schedule

Target Completion Date:

Second quarter of 2010

Related Links:

Project 2007-12 Roster

Project 2007-14 Permanent Changes to CI Time Table

Standards Involved:

INT-005-2 — Interchange Authority Distributes Arranged Interchange
INT-006-2 — Response to Interchange Authority
INT-008-2 — Interchange Authority Distributes Status

Research Needed:

None

Brief Description:

An Urgent Action SAR to modify the Timing Table in three of the Coordinate Interchange standards (INT-005, INT-006, and INT-008) was approved by its ballot pool on March 30, 2007. The Urgent Action SAR modified the timing table so that the reliability assessment period for WECC was lengthened from 5 minutes to 10 minutes for e-tags submitted less than 1 hour and greater than 20 minutes prior to ramp start.

This project is limited to replacing the timing table in the set of standards.

Standards Development Status:

Project 2007-14 Permanent Changes to CI Time Table Web page

Project Schedule:

Project 2007-14 Schedule

Target Completion Date:

Fourth quarter of 2008

Related Links:

Project 2007-14 Roster

Issues to be Considered by Drafting Team Project 2007-14 — Permanent Changes to CI Time Table		
Standard #		**Title**
INT-005-2		Interchange Authority Distributes Arranged Interchange
Issues	Other • Modify the Assessment Period for WECC from 5 minutes to 10 minutes for e-Tags submitted between 1 hour and 20 minutes prior to ramp start. Default ramp start for transactions beginning at the top of the hour is 10 minutes prior to the top of the hour with 20 minute duration. The effect in most cases would be to increase the assessment period from 5 minutes to 10 minutes for e-Tags submitted between xx:00 and xx:30 that have start times of xx+1:00. The Timing Table appears in INT-005-1, INT-006-1, and INT-008-1. • Update the Timing Table to Reflect the Categories (On-time, Late, and After-the-fact) used in the latest E-Tag Specification with respect to receipt of an Arranged Interchange (RFI): - Include designation of request status based on start and submittal times. - Include assess times for After-The-Fact (ATF) requests.	

Issues to be Considered by Drafting Team Project 2007-14 — Permanent Changes to CI Time Table	
Standard #	**Title**
INT-006-2	Response to Interchange Authority
Issues	Other • Modify the Assessment Period for WECC from 5 minutes to 10 minutes for e-Tags submitted between 1 hour and 20 minutes prior to ramp start. Default ramp start for transactions beginning at the top of the hour is 10 minutes prior to the top of the hour with 20 minute duration. The effect in most cases would be to increase the assessment period from 5 minutes to 10 minutes for e-Tags submitted between xx:00 and xx:30 that have start times of xx+1:00. The Timing Table appears in INT-005-1, INT-006-1, and INT-008-1. • Update the Timing Table to Reflect the Categories (On-time, Late, and After-the-fact) used in the latest E-Tag Specification with respect to receipt of an Arranged Interchange (RFI): - Include designation of request status based on start and submittal times. - Include assess times for After-The-Fact (ATF) requests.

Issues to be Considered by Drafting Team Project 2007-14 — Permanent Changes to CI Time Table	
Standard #	**Title**
INT-008-2	Interchange Authority Distributes Status
Issues	Other • Modify the Assessment Period for WECC from 5 minutes to 10 minutes for e-Tags submitted between 1 hour and 20 minutes prior to ramp start. Default ramp start for transactions beginning at the top of the hour is 10 minutes prior to the top of the hour with 20 minute duration. The effect in most cases would be to increase the assessment period from 5 minutes to 10 minutes for e-Tags submitted between xx:00 and xx:30 that have start times of xx+1:00. The Timing Table appears in INT-005-1, INT-006-1, and INT-008-1. • Update the Timing Table to Reflect the Categories (On-time, Late, and After-the-fact) used in the latest E-Tag Specification with respect to receipt of an Arranged Interchange (RFI): - Include designation of request status based on start and submittal times. - Include assess times for After-The-Fact (ATF) requests.

Project 2007-17 Protection System Maintenance & Testing

Standards Involved:

PRC-005-1 — Transmission and Generation Protection System Maintenance and Testing
PRC-008-0 — Underfrequency Load Shedding Equipment Maintenance Programs
PRC-011-0 — UVLS System Maintenance and Testing
PRC-017-0 — Special Protection System Maintenance and Testing

Research Needed:

None

Brief Description:

Revise PRC-005-1 — Transmission and Generation Protection System Maintenance and Testing, to consolidate PRC-005-1, PRC-008-0 — Underfrequency Load Shedding Equipment Maintenance Programs; PRC-011-0 — UVLS System Maintenance and Testing; and PRC-017-0 — Special Protection System Maintenance and Testing into a single maintenance and testing standard. Standards PRC-008-0, PRC-011-0, and PRC-017-0 would then be withdrawn.

The revised PRC-005 standard should address the issues raised in the FERC Order 693 and the issues addressed in the SPCTF report "Assessment of PRC-005-1 – Transmission and Generation Protection System Maintenance and Testing; with implications for PRC-008-0, PRC-011-0, and PRC-017-0". The revised standard should also address the comments submitted by stakeholders during the development of Version 0, and Phase III & IV and should reflect improvements identified in the Reliability Standards Review Guidelines.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project 2007-17 Protection System Maintenance & Testing

Project Schedule:

Project 2007-17 Schedule

Target Completion Date:

Third quarter of 2009

Related Links:

Project 2007-17 Roster

Issues to be Considered by Drafting Team Project 2007-17 — Protection System Maintenance & Testing	
Standard #	**Title**
PRC-005-1	Transmission and Generation Protection System Maintenance and Testing
Issues	FERC Order 693 Disposition: Approve with modifications • Maintenance and testing of a protection system must be carried out within a maximum allowable time interval that is appropriate for the type of protection system and its impact on the reliability of the bulk power system. • Consider FirstEnergy's and ISO-NE's suggestions to combine PRC-005, PRC-008, PRC-011, and PRC-017 into a single standard. V0 Industry Comments • Not a standalone standard • Include breakers/switches in list • Define evidence Phase III/IV comments • PRC 003 to 005 only addresses generator (and transmission) protective systems, without defining this term. • Need to add language to ensure the Regional Requirements focus on the most impactive scenarios • Modify applicability to clarfify that the requirements are applicable to the following: • All protection systems on the bulk electric system. • All generation protection systems whose misoperations impact the bulk electric system • There is no performance requirement or measure of effectiveness of a maintenance program required by the standard Other Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit Observation Team • As applicable, each TO, DP and GOP shall have a protection system maintenance and testing program for protection systems that affect the reliability of the BES. Does this include major equipment like circuit breakers and transformers? • Determine what on schedule means. Is an entity who maintained/tested 95% of their relays at the same level of non-compliance as an entity who maintained/tested 10% of their relays? • How do you verify DC control power? All regions require functional testing of the breaker. This should include functional relay & station battery checks, including breaker tripping, not just a visual inspection. • How do you verify compliance for cts/pts? How do you audit these within a scheduled maintenance program? As part of the procedure, most have accepted visual inspection. Some entities state that testing of the relays verify functionality of the ct/pts

Issues to be Considered by Drafting Team Project 2007-17 — Protection System Maintenance & Testing		
Standard #	**Title**	
PRC-008-0	Underfrequency Load Shedding Equipment Maintenance Programs	
Issues	FERC Order 693 Disposition: Approve with modifications • Maintenance and testing of a protection system must be carried out within a maximum allowable time interval that is appropriate for the type of protection system and its impact on the reliability of the bulk power system. Fill-in-the-Blank Team Comments • Okay if PRC-006 is fixed V0 Industry Comments • Consistent wording from standard to standard required • Definition of evidence required Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	

Issues to be Considered by Drafting Team Project 2007-17 — Protection System Maintenance & Testing	
Standard #	**Title**
PRC-011-0	UVLS System Maintenance and Testing
Issues	FERC Order 693 Disposition: Approve with modifications • Maintenance and testing of a protection system must be carried out within a maximum allowable time interval that is appropriate for the type of protection system and its impact on the reliability of the bulk power system. V0 Industry Comments • Define evidence • Exemptions for those with shunt reactors Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2007-17 — Protection System Maintenance & Testing	
Standard #	**Title**
PRC-017-0	Special Protection System Maintenance and Testing
Issues	FERC Order 693 Disposition: Approve with modifications • Maintenance and testing of a protection system must be carried out within a maximum allowable time interval that is appropriate for the type of protection system and its impact on the reliability of the bulk power system. • Require that documentation identified in requirement R2 be routinely provided to NERC or the regional entity. V0 Industry Comments • Define evidence • Need to retain two dates Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Project 2007-18 Reliability-based Control

Standards Involved:

BAL-001-0 - Real Power Balancing Control Performance
BAL-003-0 - Frequency Response and Bias
EOP-002-2 - Capacity and Energy Emergencies
IRO-005-2 - Reliability Coordination — Current Day Operations

Research Needed:

None

Brief Description:

This project includes expanding on the work already done in developing the draft BAL-007 through BAL-011 by adding requirements to address the following concerns:

- To support elimination of SOL/IROL violations caused by excessive (as determined by this standard) Area Control Error
- To prevent Interconnection frequency excursions of short duration attributed to the ramping of on and off-peak Interchange Transactions
- To support timely transmission congestion relief by requiring corrective load/generation management within a defined timeframe when ACE is impacted by the curtailment of
- Interchange Transactions under Transmission Loading Relief procedures
- To address the directives of FERC Order 693.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Coordination with NAESB:

The NAESB Wholesale Electric Quadrant (WEQ) Standards Review Subcommittee (SRS) conducted an analysis of the NERC Reliability Standards Development Plan in order to identify those projects contained in the plan that may be appropriate for the industry, through NAESB, to develop parallel and complementary business practices. Below are NAESB's observations for this project.

Related NAESB WEQ Projects (See NAESB WEQ 2008 Annual plan):
Annual Plan Item 1

Justification for NAESB consideration:
WEQ SRS analysis

SRS Recommendation:
The WEQ SRS has referred this to the JISWG for consideration.

Standards Development Status:

Project 2007-18 Reliability-based Control Web page

Project Schedule:

Project 2007-18 Schedule

Target Completion Date:

Third quarter of 2010

Related Links:

Project 2007-18 Roster

Issues to be Considered by Drafting Team Project 2007-18 — Reliability-based Control		
Standard #	**Title**	
BAL-001-0	Real Power Balancing Control Performance	
Issues	FERC Order 693 Disposition: Approved Regional Differences to BAL-001-0: ERCOT Control Performance Standard 2 Disposition: Approved with modifications • Include requirements concerning frequency response contained in Section 5 of the ERCOT protocols. • Include requirements, measures, and levels of non-compliance sections. Standards Process • Incorporate approved formal interpretation Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	

Issues to be Considered by Drafting Team Project 2007-18 — Reliability-based Control	
Standard #	**Title**
BAL-003-0	Frequency Response and Bias
Issues	FERC Order 693 Disposition: Approved with modifications • Include levels of non-compliance • Determine the appropriate periodicity of frequency response surveys necessary to ensure requirement R2 and other requirements are being met; also modify measure M1 based on this determination. • Define the necessary amount of frequency response needed for reliable operation for each balancing authority with methods of obtaining and measuring that the frequency response is achieved. Standards Process • Incorporate approved formal interpretation Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • R2 and R5 — Both requirements need to be met?

Issues to be Considered by Drafting Team Project 2007-18 — Reliability-based Control	
Standard #	**Title**
EOP-002-2	Capacity and Energy Emergencies
Issues	FERC Order 693 Disposition: Approved with modification • Address emergencies resulting not only from insufficient generation but also insufficient transmission capability, particularly as it affects the implement of the capacity and energy emergency plan. • Include all technically feasible resource options, including demand response and generation resources • Ensure the TLR procedure is not used to mitigate actual IROL violations. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • M2 —This NERC standard references the RC or BA to implement its capacity and energy plans. The RC does not have capacity and energy plans. • Is this event driven? FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Issues to be Considered by Drafting Team Project 2007-18 — Reliability-based Control	
Standard #	**Title**
IRO-005-2	Reliability Coordination — Current Day Operations
Issues	Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Project 2007-23 Violation Severity Levels

Standards Involved:

All 83 FERC approved standards.

Research Needed:

None

Brief Description:

Replace Levels of Non-compliance with Violation Severity Levels in the 83 standards approved by FERC. Obtain stakeholder consensus on the criteria used for assignment of violation severity levels.
The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project 2007-23 Violation Severity Levels Web page

Project Schedule:

Project 2007-23 Schedule

Target Completion Date:

Fourth quarter of 2008

Related Links:

Project 2007-23 Roster

Project 2008-01 Voltage and Reactive Control

Standards Involved:

VAR-001-1 — Voltage and Reactive Control
VAR-002-1 — Generator Operation for Maintaining Network Voltage Schedules

Research Needed:

Determine how to determine the amount of voltage and reactive reserves are needed. The research should identify how to determine the split of control between the reactive power provided by the generator and reactive power provided through reactors and power system stabilizers located geographically distant from the generator.

Research should identify how to subdivide an interconnection's need for reactive reserves amongst its Transmission Operators.

Brief Description:

This is a new project and supports a blackout recommendation. Industry debate is needed on whether there should be a North American standard that requires a specific amount of reserves, or whether requirements for specific reserves should continue to be addressed at the regional level. The requirements in the existing standards need to be upgraded to be more specific in defining voltage and reactive power schedules. Consideration should be given to adding a requirement for the Reliability Coordinator to monitor and take action if reactive power falls outside identified limits.

The project will incorporate the interpretation of VAR-002 Requirement 1 and Requirement 2.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Coordination with NAESB:

The NAESB Wholesale Electric Quadrant (WEQ) Standards Review Subcommittee (SRS) conducted an analysis of the NERC Reliability Standards Development Plan in order to identify those projects contained in the plan that may be appropriate for the industry, through NAESB, to develop parallel and complementary business practices. Below are NAESB's observations for this project.

Related NAESB WEQ Projects (See NAESB WEQ 2008 Annual plan):
Annual Plan Item 1

Justification for NAESB consideration:
Industry recommendations

SRS Recommendation:
This project may need NAESB attention in the future. The WEQ SRS will place this on its watch list. The SRS wishes to know if this is still an active NERC project, as it is not included on their Standards under Development list.

Standards Development Status:

Project has not started.

Project Schedule:

Project 2008-01 Project Schedule

Target Completion Date:

Fourth quarter of 2011

Related Links:

Project 2008-01 Roster

Issues to be Considered by Drafting Team Project 2008-01 — Voltage and Reactive Control	
Standard #	**Title**
VAR-001-1	Voltage and Reactive Control
Issues	FERC Order 693 Disposition: Approve with modifications • Expand the applicability to include LSEs and reliability coordinators and define the reliability coordinators monitoring responsibilities. • Address reactive power requirements for LSEs on a comparable basis with purchasing-selling entities. • Include APPA's comments regarding varying power factor requirements due to system conditions and equipment in the standards development process. • Includes detailed and definitive requirements on "established limits" and "sufficient reactive resources", and identifies acceptable margins above the voltage instability points. • Address the concerns of Dynegy, EEI, and MISO through the standards development process. • Perform voltage analysis periodically, using on-line techniques where commercially available and off-line techniques where not available on-line, to assist real-time operations, for areas susceptible to voltage instability. • Include controllable load among the reactive resources to satisfy reactive requirements, considering the comments of Southern California Edison and SPA in the development of the standard. • Address the power factor range at the interface between LSEs and the transmission grid. V0 Industry Comments • Not a standard but a business practice • Expand to include relays • Define voltage levels • Clarify if this includes distribution • Clarify responsibility for voltage support • Add GO as entity • Mention power factor requirements for distribution • Add BA (R1 & 3)and RA (R5, 7, 8, 10 & 11) • Move R9 to 5.2 • Delete SOL violations • Define high probability Phase III/IV comments • No requirement for verifying that the reactive resources are truly available. • No criteria for what is an acceptable reactive margin. o R3, R6, R10 go beyond the control of the responsible entity noted. o R3, the Transmission Operator only has the reactive resources that exist in the area-- how does the TO "acquire sufficient reactive resources" if existing resources are not adequate?

	o Should R3 be assigned to the TP? o Should the word "acquire" in R3 be replaced with the word "operate"? o R6 and R10.1 presume that sufficient reactive resources are available. • R3 covers normal and contingency conditions, while R10 mentions only first contingency conditions. Is there a reason for this difference? • R3 Suggest changing the phrase…"to protect the voltage"…. to "maintain the voltage" • What does the second sentence in R3 mean by the phrase 'transmission operator's share of the reactive requirements of interconnecting transmission circuits'? What would be the reactive requirements of transmission circuits? • R5 This requirement is an Open Access Transmission Tariff requirement and does not belong in a reliability standard. • Will R6 also apply to wind generation absorbing reactive power at the point of interconnection? • R7 obligates Transmission Operators to know the status of all reactive power sources including AVRs and PSSs. Clarify that this means the generator is available and if dispatched will operate in voltage control mode and with the PSS active. • R7 and R8 – consider adding more specificity to distinguish the TOP's authority to direct others to operate (Each Transmission Operator shall operate owned devices or direct the operation of, within their normal operating parameters and capabilities, capacitive and inductive reactive resources within its area-including reactive generation scheduling; transmission line and reactive resource switching; and, if necessary, load shedding- to maintain system and Interconnection voltages within established limits.) • Consolidate R8 and R9 • R9.1 this requirement is not feasible. Cannot dictate where generation resources are to be disbursed or located. • R10 remove "first" so as not to limit this requirement to first contingency conditions. As written with or without removing "first", R10 provides no additional information not already required in R3. • R10.1 does 'disperse and locate' mean the same as 'dispatch'? If so, changing the wording to 'dispatch' would make the meaning clearer. • R11 –Redundant with TOP-007 • The language in the measures and compliance sections such as "2.1.2 One incident of failing to maintain a voltage or reactive power schedule" is too vague and does not specify any duration that is acceptable or unacceptable to be off schedule. • VAR-001 requirements (R1, R2, R7, R8, R9, R10, and R12) are redundant to the TOP standards Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit Observation Team • R4 — If the TOP does not supply the GOP with a voltage or reactive power schedule is that a noncompliance for the TOP?

Issues to be Considered by Drafting Team Project 2008-01 — Voltage and Reactive Control		
Standard #		**Title**
VAR-002-1		Generator Operation for Maintaining Network Voltage Schedules
Issues	FERC Order 693 Disposition: Approved • Consider Dynegy's suggestion to improve the standard. Phase III/IV comments • R5 of VAR-002: Recognizing that such action would require the generator to change its loading level or cycle, the transmission operator should not rely on tap position changes on a step-up transformer with a no-load tap changer (NLTC) for periodic or seasonal system control, unless there is an explicit voluntary arrangement with the Generator Operator. For each instance of an urgent directive for such action, the transmission operator must justify its action to affected parties Standards Process • Incorporate approved formal interpretation Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit Observation Team • If a generator does not have an automatic voltage regulator do they need to install one?	

Project 2008-02 Undervoltage Load Shedding

Standards Involved:

PRC-010-0 — Assessment of the Design and Effectiveness of UVLS Program
PRC-022-1 — Under-Voltage Load Shedding Program Performance

Research Needed:

Criteria for installing UVLS need to be identified.

Brief Description:

These standards should be consolidated. Missing are any criteria for identifying where UVLS should be installed.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project has not started.

Project Schedule:

Project 2008-02 Project Schedule

Target Completion Date:

TBD

Related Links:

Project 2008-02 Roster

Issues to be Considered by Drafting Team Project 2008-02 — Undervoltage Load Shedding	
Standard #	**Title**
PRC-010-0	Technical Assessment of the Design and Effectiveness of Undervoltage Load Shedding Program
Issues	FERC Order 693 Disposition: Approve with modifications • Require that an integrated and coordinated approach be included in all protection systems on the bulk power system, including generators and transmission lines, generators' low-voltage ride-through capabilities, and UFLS and UVLS systems. V0 Industry Comments • Define evidence • Level 4 vs. level 1 changes • Exemptions for some who use shunt reactors Phase III/IV comments • PRC-010 is a very weak standard – it only requires documentation and, in very broad terms, 'coordination' – it doesn't specify any level of desired performance or any specific scope for coordination. There should be some details to identify what the coordination must achieve – such as verification that the UVLS will trip when voltage drops to a specified voltage and verification that only a specified amount of load will be tripped and that other special protection systems will not be activated by the UVLS program. • There is no requirement that identifies the desired performance of a UVLS program (what voltage set points and timing are acceptable?). • What is the reliability-related need for the RRO to collect data on misoperations and operations of UVLS programs? Is this information used for anything? Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated

	requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Issues to be Considered by Drafting Team Project 2008-02 — Undervoltage Load Shedding	
Standard #	**Title**
PRC-022-1	Under-Voltage Load Shedding Program Performance
Issues	FERC Order 693 Disposition: Approved. • Consider FirstEnergy's suggestions to revise requirement R1.3 as part of the standards development process. Phase III/IV comments • Consider incorporating into this family of standards a requirement that each TO should study, and implement if found effective, a UVLS program to mitigate the risk of voltage collapse or voltage instability in the BES. • The TO should also be required to demonstrate that its UVLS program is coordinated with adjacent TOs. • The reliability-related need for the RRO to collect data on operations and misoperations isn't clear – should this be revised and made available instead to the Compliance Monitor or to the Planning Authority? Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Project 2008-05 Credible Multiple Element Contingencies

Standards Involved:

FAC-011-2 — System Operating Limits Methodology for the Operations Horizon

Research Needed:

None

Brief Description:

Revise FAC-011-2 to require consideration of credible multiple element contingencies for determining system operating limits (SOLs) in the operating horizon, as defined in TLP-003-0 and FAC-010-1 in the planning horizon (TPL-001-1, which is proposed to replace TPL-001-0 through TPL-004-0, would continue to require consideration of credible multiple element contingencies).

Credible multiple element contingencies pose a threat to the reliability of the bulk electric system in North America. As per an analysis conducted by PPL Electric Utilities, presented to the NERC Planning Committee on March 15, 2006, historical data shows multiple element contingency events occurred on the PJM system on an average of 18 times per year during the 1996-2003 period, clearly showing that these are not uncommon events. Not developing both planning and operating standards for determining SOLs that consider multiple facility forced outages, i.e., Category C contingencies, despite the frequent occurrence of such events, would be accepting a type of event that could lead to a high risk of unreliable performance. Therefore, the system must be postured for meeting Category C contingencies for determining SOLs in the operating horizon, as is now required by Standards TPL-003-0 and FAC-010-1 in the planning horizon. Strengthening of FAC-011-1, by considering credible multiple element contingencies, would make this standard consistent with TPL-003-0 and FAC-010-1, and would improve system performance by operating, as well as planning to Category C contingencies.

Standards Development Status:

Project 2008-05 Credible Multiple Element Contingencies Web page

Project Schedule:

Project 2008-05 Project Schedule (TBD)

Target Completion Date:

TBD

Related Links:

Project 2008-05 Roster

Project 2008-06 Cyber Security — Order 706

Standards Involved:

CIP-002-1 — Critical Cyber Asset Identification
CIP-003-1 — Security Management Controls
CIP-004-1 — Personnel & Training
CIP-005-1 — Electronic Security Perimeter(s)
CIP-006-1 — Physical Security of Critical Cyber Assets
CIP-007-1 — Systems Security Management
CIP-008-1 — Incident Reporting and Response Planning
CIP-009-1 — Recovery Plans for Critical Cyber Assets

Research Needed:

None

Brief Description:

Implement changes to the Cyber Security Standards (above) as indicated in FERC Order 706.

This set of revisions in this project includes:

- Modifying the standards so they conform to the latest approved versions of the ERO Rules of Procedure as outlined in the Standard Review Guidelines identified in Attachment 1.
- Addressing the directives issued by FERC, in Order 706 relative to the approved Cyber Security Standards CIP-002-1 through CIP-009-1. Refer to http://www.ferc.gov/whats-new/comm-meet/2008/011708/E-2.pdf for the complete text of the final order. Specific requirements from the Order are identified in Attachment 2.
    - Emphasis on Order 706 directive for NERC to address revisions to the CIP standards considering applicable feature of the NIST Security Risk Management Framework among other resources.
- Incorporating clarifications from the Interpretation of CIP-006-1 Requirement 1.1.

Additional issues identified by stakeholders during the posting of this SAR are listed in Attachment 3.

Revisions should consider other Cyber-related standards, guidelines and activities:

- Consider adopting the NIST Security Risk Management Framework (includes GAO, OMB and FIPS)
- Consider other cyber security related documents such as NIST, ISO 27000 Family, CIPC WG Risk Assessment Guideline, MITRE corporation technical report, DHS, National Laboratories papers, DOE 417, IEC, ISA, etc.
- Stay apprised of coordination work between FERC, NEI and NRC in regard to the nuclear facility exemption issue with respect to regulatory gaps. As necessary modify the standards to reflect current determinations.

Standards Development Status:

Project 2008-06 Cyber Security Web page

Project Schedule:

Project 2008-06 Project Schedule (TBD)

Target Completion Date:

TBD

Related Links:

Project 2008-06 Roster

Issues to be Considered by Drafting Team Project 2008-06 — Cyber Security	
Standard #	**Title**
CIP-002-1	Cyber Security — Critical Cyber Asset Identification
Issues	FERC Cyber NOPR Comments Paragraph 325 - Add missing Violation Risk Factors to Requirement R3.1 Paragraph 41 Add that a responsible entity must implement a plan, policy or procedure that it is required to develop. (CIP-002-009) Paragraph 48 Develop a self-certification process with more frequent certifications, either tied to target dates in the schedule or perhaps quarterly or semi-annual certifications. Paragraph 58 Remove references to the "reasonable business judgment" language. Paragraph 77 Treat instances where technical feasibility is invoked as exceptions that require certain alternative courses of action; Paragraph 77 Interpret the term "technical feasibility" narrowly as applying to the technical characteristics of existing assets and having no relation to the considerations of business judgment discussed above; Paragraph 79 Establish a structure to require accountability from those who rely on "technical feasibility" as the basis for an exception as discussed in Paragraph 79 of the NOPR. This proposed structure should include a review by senior management of the expediency and effectiveness of the manner in which a responsible entity has addressed each of these three proposed conditions. Paragraph 79 Require a responsible entity to report and justify to the ERO and the Regional Entity for approval each exception and its expected duration. In situations where any of the proposed conditions are not satisfied, the ERO or the Regional Entity would inform the responsible entity that its claim to an exception based on technical feasibility is insufficient and therefore not approved. Failure to timely rectify the deficiency would invalidate the exception for compliance purposes. Paragraph 82 Consider making "technically feasible," and derivative forms of that phrase as used in the CIP Reliability Standards, defined terms in NERC's glossary, pursuant to the prior clarifications, without any reference to reasonable business judgment. Paragraph 88 Consider the development and implementation of the NIST standards to determine if they contain provisions that will better protect the Bulk-Power System. Seek and consider comments from those federal entities (TVA and WAPA) on the effectiveness of the NIST standards and on any implementation issues. Paragraphs 330 Modify the Violation Risk Factors as directed in the NOPR list of proposed Actions. Paragraphs 77 Eliminate the "acceptance of risk" option from the CIP 83-86 Reliability Standards; Paragraphs 77/80 Develop an annual report that quantifies, on a wide-

	area basis, the frequency with which responsible entities invoke "technical feasibility" or other provisions that produce the same outcome as discussed in Paragraphs 77 and 80 of the NOPR. The report should include aggregated information with sufficient detail for the Commission to understand the frequency in which specific provisions are being invoked as well as mitigation and remediation plans over time and by region Paragraph 103 Provide some basic guidance on the content or considerations to be applied in a risk assessment methodology. Proper risk-based assessment methodology to identify critical assets should examine (1) the consequences of the loss of the asset to the Bulk-Power System and (2) the consequence to the Bulk-Power System if an adversary gains control of the asset for intentional misuse. Paragraph 104 ERO and Regional Entities provide reasonable technical support to such entities that would assist them in determining whether their assets are critical to the Bulk-Power System. Paragraph 108 Include a requirement that a senior manager annually review and approve the risk-based assessment methodology. Paragraph 113 Include a mechanism for the external review and approval of critical asset lists based on a regional perspective. Paragraph 115 Modify Requirement R1.2 to clarify the requirement to show why specific assets were or were not chosen as critical assets, and to require the consideration of misuse of control Industry Work Plan Comment – Compliance Measures • Consider MISO's comment that the standard should be measured at the standard level rather than the individual requirement level. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order

	(http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Issues to be Considered by Drafting Team Project 2008-06 — Cyber Security	
Standard #	**Title**
CIP-003-1	Cyber Security — Security Management Controls
Issues	VRF comments • R4.2 – only an administrative requirement FERC Cyber NOPR Comments Paragraph 325 - Add missing Violation Risk Factors to Requirement R4.1 and Requirement R5.1.2 Paragraph 41 Add that a responsible entity must implement a plan, policy or procedure that it is required to develop. (CIP-002-009) Paragraph 48 Develop a self-certification process with more frequent certifications, either tied to target dates in the schedule or perhaps quarterly or semi-annual certifications. Paragraph 58 Remove references to the "reasonable business judgment" language. Paragraph 77 Treat instances where technical feasibility is invoked as exceptions that require certain alternative courses of action; Paragraph 77 Interpret the term "technical feasibility" narrowly as applying to the technical characteristics of existing assets and having no relation to the considerations of business judgment discussed above; Paragraph 79 Establish a structure to require accountability from those who rely on "technical feasibility" as the basis for an exception as discussed in Paragraph 79 of the NOPR. This proposed structure should include a review by senior management of the expediency and effectiveness of the manner in which a responsible entity has addressed each of these three proposed conditions. Paragraph 79 Require a responsible entity to report and justify to the ERO and the Regional Entity for approval each exception and its expected duration. In situations where any of the proposed conditions are not satisfied, the ERO or the Regional Entity would inform the responsible entity that its claim to an exception based on technical feasibility is insufficient and therefore not approved. Failure to timely rectify the deficiency would invalidate the exception for compliance purposes. Paragraph 82 Consider making "technically feasible," and derivative forms of that phrase as used in the CIP Reliability Standards, defined terms in NERC's glossary, pursuant to the prior clarifications, without any reference to reasonable business judgment. Paragraph 88 Consider the development and implementation of the NIST standards to determine if they contain provisions that will better protect the Bulk-Power System. Seek and consider comments from those federal entities (TVA and WAPA) on the effectiveness of the NIST standards and on any implementation issues. Paragraphs 330 Modify the Violation Risk Factors as directed in the NOPR

	list of proposed Actions. Paragraphs 77 Eliminate the "acceptance of risk" option from the CIP 83-86 Reliability Standards; Paragraphs 77/80 Develop an annual report that quantifies, on a wide-area basis, the frequency with which responsible entities invoke "technical feasibility" or other provisions that produce the same outcome as discussed in Paragraphs 77 and 80 of the NOPR. The report should include aggregated information with sufficient detail for the Commission to understand the frequency in which specific provisions are being invoked as well as mitigation and remediation plans over time and by region Paragraph 126-127 Provide additional guidance for the topics and processes that the required cyber security policy should address to ensure that the responsible entity reasonably protects its critical cyber assets as explained in Paragraph 126-127 of the NOPR. Paragraph 132 Modify Requirement R3 of CIP-003-1 to require a responsible entity to periodically submit to the Regional Entity the documentation of exceptions to the cyber security policy. Paragraph 133 Clarify that the exceptions mentioned in Reliability Standard CIP-003-1, Requirements R2.3 and R3, do not except responsible entities from the requirements of the CIP Reliability Standards. Paragraph 136 Modify CIP-003-1, to make clear the senior manager's ultimate responsibility. Paragraph 139 Modify Reliability Standards CIP-003-1, CIP-004-1, and/or CIP-007-1, to ensure and make clear that access to protected information is revoked promptly. Paragraph 144 Modify Requirement R6 of Reliability Standard CIP-003-1 to include in the process of change control and configuration management a requirement for detection and monitoring controls to determine if changes are made as intended and to investigate whether any unintended or unplanned changes have been made. Paragraph 147 Modify Reliability Standard CIP-003-1 to provide direction regarding the issues and concerns that a "mutual distrust" posture must address to protect the control system from the "outside world." Paragraph 312 R6 - The CIP Reliability Standards should specifically state that a change control process should include procedures for a tested backup. Adding language, such as "these procedures are to include practices to test and verify the operability of the backup before it is stored and relied upon for recovery," would eliminate this ambiguity. Industry Work Plan Comment – Compliance Measures • Consider MISO's comment that the standard should be measured at the standard level rather than the individual requirement level. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

	NERC Audit and Observation Team • R4.1 — Security Management Controls specifies the minimum Critical Cyber Asset information to be protected in requirement R4.1. Among the information asset types identified by R4.1. are network topology diagrams. The context of this requirement is clear and applies to computer network topology diagrams relating to Critical Cyber Asset information only. FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Issues to be Considered by Drafting Team Project 2008-06 — Cyber Security	
Standard #	**Title**
CIP-004-1	Cyber Security — Personnel & Training
Issues	VRF comment • R3 - This needs to be looked at for 30 days - should be done prior to access being granted. FERC Cyber NOPR Comments Paragraph 325 - Add missing Violation Risk Factors to Requirement R2.2.2 and Requirement R2.2.3 Paragraph 41 Add that a responsible entity must implement a plan, policy or procedure that it is required to develop. (CIP-002-009) Paragraph 48 Develop a self-certification process with more frequent certifications, either tied to target dates in the schedule or perhaps quarterly or semi-annual certifications. Paragraph 58 Remove references to the "reasonable business judgment" language. Paragraph 77 Treat instances where technical feasibility is invoked as exceptions that require certain alternative courses of action; Paragraph 77 Interpret the term "technical feasibility" narrowly as applying to the technical characteristics of existing assets and having no relation to the considerations of business judgment discussed above; Paragraph 79 Establish a structure to require accountability from those who rely on "technical feasibility" as the basis for an exception as discussed in Paragraph 79 of the NOPR. This proposed structure should include a review by senior management of the expediency and effectiveness of the manner in which a responsible entity has addressed each of these three proposed conditions. Paragraph 79 Require a responsible entity to report and justify to the ERO and the Regional Entity for approval each exception and its expected duration. In situations where any of the proposed conditions are not satisfied, the ERO or the Regional Entity would inform the responsible entity that its claim to an exception based on technical feasibility is insufficient and therefore not approved. Failure to timely rectify the deficiency would invalidate the exception for compliance purposes. Paragraph 82 Consider making "technically feasible," and derivative forms of that phrase as used in the CIP Reliability Standards, defined terms in NERC's glossary, pursuant to the prior clarifications, without any reference to reasonable business judgment. Paragraph 88 Consider the development and implementation of the NIST standards to determine if they contain provisions that will better protect the Bulk-Power System. Seek and consider comments from those federal entities (TVA and WAPA) on the effectiveness of the NIST standards and on any implementation issues. Paragraphs 330 Modify the Violation Risk Factors as directed in the NOPR list of proposed Actions.

	Paragraphs 77 Eliminate the "acceptance of risk" option from the CIP 83-86 Reliability Standards; Paragraphs 77/80 Develop an annual report that quantifies, on a wide-area basis, the frequency with which responsible entities invoke "technical feasibility" or other provisions that produce the same outcome as discussed in Paragraphs 77 and 80 of the NOPR. The report should include aggregated information with sufficient detail for the Commission to understand the frequency in which specific provisions are being invoked as well as mitigation and remediation plans over time and by region Paragraph 158 Require affected personnel to receive the required training before obtaining access to critical cyber assets (rather than within 90 days of access authorization), but allowing limited exceptions, such as during emergencies, subject to documentation and mitigation. Paragraph 159 Require responsible entities to identify "core training" elements to ensure that essential training elements will not go unheeded in an emergency and other contingency situations where full training prior to access will not best serve the reliability of the Bulk-Power System. Alternate provisions for emergencies and certain other conditions could be designed, such as requiring documentation of all personnel who received access to particular equipment during the emergency and whether they received a briefing or any other training prior to their access concerning the specific facilities; the extent to which people needed for the emergency had received general training and possessed appropriate specialized expertise for the circumstance; and any risk mitigation steps taken during the emergency access. Paragraph 159 Consider what, if any, modifications to CIP-004-1 should be made to address the concern raised by the ISA Group that security trainers be adequately trained themselves. Paragraph 160 Clarify that the cyber security training programs required by Requirement R2 are intended to encompass training on the networking hardware and software and other issues of electronic interconnectivity supporting the operation and control of the critical cyber assets. One method of clarification the ERO should consider is the addition of a provision such as that contained in CIP-005-1, Requirement R1.4, which specifically subjects any non-critical cyber asset within a defined electronic security perimeter to the Reliability Paragraph 161 Increase the guidance in the Reliability Standard as to the scope and quality of training. Examples of some areas where the inclusion of guidance can be considered are: control of electronic devices (such as laptop computers), the appropriate audiences for the training, delivery methods, and updates of training materials. Paragraph 161 Consider relevant aspects of the cited NIST Special Publications, as well as other relevant models, to improve CIP-004-1 and prevent a lowest common denominator result. Paragraph 166 Develop modifications to Requirement R2 to provide that newly-hired personnel and vendors should not have access to critical cyber assets, except in specified circumstances such as an emergency. The ERO

	should determine the parameters of such exceptional circumstances in developing the proposed modification through its Reliability Standards development process. Paragraph 166 The 30-day window allowing access before the personnel risk assessment is completed remain in effect for current employees and vendors with existing contractual relationships with the responsible entity as of the effective date of the Reliability Standard. We propose to direct that the ERO include, in developing modifications to CIP-004-1, criteria that address circumstances in which current personnel can continue access to critical cyber assets during the 30-day investigative period during initial compliance with CIP-004-1. Paragraph 169 Require immediate revocation of access privileges when an employee, contractor, or vendor no longer performs a function that requires authorized physical or electronic access to a critical cyber asset for any reason (including disciplinary action, transfer, retirement or termination). Paragraph 169 Modify Requirement R4 to make clear that unescorted physical access should be denied to individuals that are not identified on the authorization list. Paragraph 173 Address the "joint use" concerns expressed by APPA/LPPC while developing any modifications to these Reliability Standards directed in a final rule. Regardless of whether a facility subject to CIP-004-1 is jointly owned or not, all entities that have access to it must comply with CIP-004-1. Each entity, however, is responsible for only its compliance and may not attempt to block or limit another's access on the basis of its perception that the other entity has not complied with CIP-004-1. Industry Work Plan Comment – Compliance Measures • Consider MISO's comment that the standard should be measured at the standard level rather than the individual requirement level. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address

	the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Issues to be Considered by Drafting Team Project 2008-06 — Cyber Security	
Standard #	**Title**
CIP-005-1	Cyber Security — Electronic Security Perimeter(s)
Issues	VRF comments • R1.3 – administrative definition • R1.5 – standard to comply with a standard = double jeopardy FERC Cyber NOPR Comments Paragraph 325 - Add missing Violation Risk Factors to the Requirement R1.5 Paragraph 41 Add that a responsible entity must implement a plan, policy or procedure that it is required to develop. (CIP-002-009) Paragraph 48 Develop a self-certification process with more frequent certifications, either tied to target dates in the schedule or perhaps quarterly or semi-annual certifications. Paragraph 58 Remove references to the "reasonable business judgment" language. Paragraph 77 Treat instances where technical feasibility is invoked as exceptions that require certain alternative courses of action; Paragraph 77 Interpret the term "technical feasibility" narrowly as applying to the technical characteristics of existing assets and having no relation to the considerations of business judgment discussed above; Paragraph 79 Establish a structure to require accountability from those who rely on "technical feasibility" as the basis for an exception as discussed in Paragraph 79 of the NOPR. This proposed structure should include a review by senior management of the expediency and effectiveness of the manner in which a responsible entity has addressed each of these three proposed conditions. Paragraph 79 Require a responsible entity to report and justify to the ERO and the Regional Entity for approval each exception and its expected duration. In situations where any of the proposed conditions are not satisfied, the ERO or the Regional Entity would inform the responsible entity that its claim to an exception based on technical feasibility is insufficient and therefore not approved. Failure to timely rectify the deficiency would invalidate the exception for compliance purposes. Paragraph 82 Consider making "technically feasible," and derivative forms of that phrase as used in the CIP Reliability Standards, defined terms in NERC's glossary, pursuant to the prior clarifications, without any reference to reasonable business judgment. Paragraph 88 Consider the development and implementation of the NIST standards to determine if they contain provisions that will better protect the Bulk-Power System. Seek and consider comments from those federal entities (TVA and WAPA) on the effectiveness of the NIST standards and on any implementation issues. Paragraphs 330 Modify the Violation Risk Factors as directed in the NOPR

	list of proposed Actions. Paragraphs 77 Eliminate the "acceptance of risk" option from the CIP 83-86 Reliability Standards; Paragraphs 77/80 Develop an annual report that quantifies, on a wide-area basis, the frequency with which responsible entities invoke "technical feasibility" or other provisions that produce the same outcome as discussed in Paragraphs 77 and 80 of the NOPR. The report should include aggregated information with sufficient detail for the Commission to understand the frequency in which specific provisions are being invoked as well as mitigation and remediation plans over time and by region Paragraph 181 Implement a defensive security approach including two or more defensive measures in a defense in depth posture. Paragraph 188 Ensure access is granted only to users who have corresponding job responsibilities. Paragraph 188 Requirement R2.4 should provide greater clarity regarding the expectation for adequate compliance by identifying examples of specific verification technologies that would satisfy the Requirement, while also allowing compliance pursuant to other technically equivalent measures or technologies. Paragraph 189 Providing such basic security measures as access control can be accomplished using/placing measures "in front of" systems as opposed to "inside" systems. Such an approach can be used to secure even older, yet functioning, legacy systems. Evaluate the issue and provide specific guidance to responsible entities that must face such issues. Paragraph 197 Develop a bifurcated review requirement of access logs at electronic access points in which readily available logs are reviewed more frequently than every 90 days. The Commission believes such review should be performed at least weekly. must include in the Reliability Standard guidance on how a responsible entity should designate individual assets as "readily accessible" or "not readily accessible," Paragraph 201 Require a vulnerability assessment of the electronic access points as part of, or contemporaneously with, any modifications to the electronic security perimeter or defense in depth strategy. Paragraph 201 Requirement R4 should provide for the conduct of live vulnerability assessments at least once every three years, with subsequent annual paper assessments in the intervening years. Industry Work Plan Comment – Compliance Measures Consider MISO's comment that the standard should be measured at the standard level rather than the individual requirement level. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-

	004-000, RC07-6-000, and RC07-7-000
	• In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see:
	  • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf)
	  • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf),
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Issues to be Considered by Drafting Team Project 2008-06 — Cyber Security	
Standard #	**Title**
CIP-006-1	Cyber Security — Physical Security of Critical Cyber Assets
Issues	VRF comments • R1.5 & .9 – Should be consistent with CIP-005 • R1.8 - A requirement to meet other standard requirements - double jeopardy • R2.1, .2, .3 & .4 - These are 4 things from which to choose one or more, so no one of them is required. Should be a bulleted list, not sub-requirements. • R3.1 – May statement FERC Cyber NOPR Comments Paragraph 41 Add that a responsible entity must implement a plan, policy or procedure that it is required to develop. (CIP-002-009) Paragraph 48 Develop a self-certification process with more frequent certifications, either tied to target dates in the schedule or perhaps quarterly or semi-annual certifications. Paragraph 58 Remove references to the "reasonable business judgment" language. Paragraph 77 Treat instances where technical feasibility is invoked as exceptions that require certain alternative courses of action; Paragraph 77 Interpret the term "technical feasibility" narrowly as applying to the technical characteristics of existing assets and having no relation to the considerations of business judgment discussed above; Paragraph 79 Establish a structure to require accountability from those who rely on "technical feasibility" as the basis for an exception as discussed in Paragraph 79 of the NOPR. This proposed structure should include a review by senior management of the expediency and effectiveness of the manner in which a responsible entity has addressed each of these three proposed conditions. Paragraph 79 Require a responsible entity to report and justify to the ERO and the Regional Entity for approval each exception and its expected duration. In situations where any of the proposed conditions are not satisfied, the ERO or the Regional Entity would inform the responsible entity that its claim to an exception based on technical feasibility is insufficient and therefore not approved. Failure to timely rectify the deficiency would invalidate the exception for compliance purposes. Paragraph 82 Consider making "technically feasible," and derivative forms of that phrase as used in the CIP Reliability Standards, defined terms in NERC's glossary, pursuant to the prior clarifications, without any reference to reasonable business judgment. Paragraph 88 Consider the development and implementation of the NIST standards to determine if they contain provisions that will better protect the Bulk-Power System. Seek and consider comments from those federal entities (TVA and WAPA) on the effectiveness of the NIST standards and on any implementation issues. Paragraphs 330 Modify the Violation Risk Factors as directed in the NOPR list of

proposed Actions.

Paragraphs 77 Eliminate the "acceptance of risk" option from the CIP 83-86 Reliability Standards;

Paragraphs 77/80 Develop an annual report that quantifies, on a wide-area basis, the frequency with which responsible entities invoke "technical feasibility" or other provisions that produce the same outcome as discussed in Paragraphs 77 and 80 of the NOPR. The report should include aggregated information with sufficient detail for the Commission to understand the frequency in which specific provisions are being invoked as well as mitigation and remediation plans over time and by region

Paragraph 209 Treat the allowance of "alternative measures" as "interim actions" developed and implemented as part of a mitigation plan under a "technical feasibility" exception.

Paragraph 214 A responsible entities must, at a minimum, implement two or more different security procedures when establishing a physical security perimeter around critical cyber assets.

Paragraph 221 (1) A readily accessible critical cyber asset be tested every year with a one-year record requirement for the retention of testing, maintenance, and outage records; and (2) a non- readily accessible critical cyber asset be tested in a three-year cycle with a three-year record retention requirement.

Standards Process
- Incorporate approved formal interpretation

Industry Work Plan Comment – Compliance Measures
- Consider MISO's comment that the standard should be measured at the standard level rather than the individual requirement level.

Other
- Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000

- In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see:
  - FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf)
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Issues to be Considered by Drafting Team Project 2008-06 — Cyber Security	
Standard #	**Title**
CIP-007-1	Cyber Security — Systems Security Management
Issues	VRF comment • R2 & 2.3 - An open port can lead to loss of system integrity. • R3 **-** An improper patch can lead to loss of system integrity. FERC Cyber NOPR Comments Paragraph 325 - Add missing Violation Risk Factors to the Requirement R5.1, Requirement R5.3.3, and Requirement R7 Paragraph 41 Add that a responsible entity must implement a plan, policy or procedure that it is required to develop. (CIP-002-009) Paragraph 48 Develop a self-certification process with more frequent certifications, either tied to target dates in the schedule or perhaps quarterly or semi-annual certifications. Paragraph 58 Remove references to the "reasonable business judgment" language. Paragraph 77 Treat instances where technical feasibility is invoked as exceptions that require certain alternative courses of action; Paragraph 77 Interpret the term "technical feasibility" narrowly as applying to the technical characteristics of existing assets and having no relation to the considerations of business judgment discussed above; Paragraph 79 Establish a structure to require accountability from those who rely on "technical feasibility" as the basis for an exception as discussed in Paragraph 79 of the NOPR. This proposed structure should include a review by senior management of the expediency and effectiveness of the manner in which a responsible entity has addressed each of these three proposed conditions. Paragraph 79 Require a responsible entity to report and justify to the ERO and the Regional Entity for approval each exception and its expected duration. In situations where any of the proposed conditions are not satisfied, the ERO or the Regional Entity would inform the responsible entity that its claim to an exception based on technical feasibility is insufficient and therefore not approved. Failure to timely rectify the deficiency would invalidate the exception for compliance purposes. Paragraph 82 Consider making "technically feasible," and derivative forms of that phrase as used in the CIP Reliability Standards, defined terms in NERC's glossary, pursuant to the prior clarifications, without any reference to reasonable business judgment. Paragraph 88 Consider the development and implementation of the NIST standards to determine if they contain provisions that will better protect the Bulk-Power System. Seek and consider comments from those federal entities (TVA and WAPA) on the effectiveness of the NIST standards and on any implementation issues. Paragraphs 330 Modify the Violation Risk Factors as directed in the NOPR list

	of proposed Actions. Paragraphs 77 Eliminate the "acceptance of risk" option from the CIP 83-86 Reliability Standards; Paragraphs 77/80 Develop an annual report that quantifies, on a wide-area basis, the frequency with which responsible entities invoke "technical feasibility" or other provisions that produce the same outcome as discussed in Paragraphs 77 and 80 of the NOPR. The report should include aggregated information with sufficient detail for the Commission to understand the frequency in which specific provisions are being invoked as well as mitigation and remediation plans over time and by region Paragraph 230 Modify Requirement R1 and its subparts to require documentation of each significant difference between the testing and the production environments, and how each such difference is mitigated or otherwise addressed. Paragraph 234 Revise Requirement R2 and its subparts to reflect our determinations discussed above to remove the "acceptance of risk" language and to impose the same conditions and reporting requirements here for "technical limitations" as imposed elsewhere in this NOPR regarding "technical feasibility." Paragraph 239 The "acceptance of risk" language must be removed in R3also. Paragraph 244 The "acceptance of risk" language must be removed here (R4), and the same conditions and reporting requirements regarding "technical feasibility" that apply elsewhere are applicable here. Paragraph 244 Modify Requirement R4 to include safeguards against personnel introducing, either maliciously or unintentionally, viruses or malicious software to a cyber asset within the electronic security perimeter through remote access, electronic media, or other means. Paragraph 251 Revise Requirement R6 to include a requirement that logs be reviewed on a weekly basis for readily accessible critical assets and reviewed within the retention period for assets that are not readily accessible. Accessibility should take into account both physical remoteness and available communications channels. We would expect control centers to fall within the "readily accessible" category. Paragraph 252 Revise Requirement R6.4 to clarify that while the retention period for all logs specified in Requirement R6 is 90 days, the retention period for logs mentioned in Requirement R6.3 for the support of incident response as required in CIP-008-1 is the retention period required by CIP-008-1, i.e., three years. Paragraph 256 Clarify that R7 assures that there is no opportunity for unauthorized retrieval of data from a cyber asset prior to discarding it or redeploying it. Paragraph 260 Provide more direction on what features, functionality, and vulnerabilities the responsible entities should address when conducting the vulnerability assessments. Paragraph 260 Revise Requirement R8.4 to require an entity-imposed timeline for completion of the already-required action plan.

	Paragraph 263 Modify Requirement R9 to state that the changes resulting from modifications to the system or controls shall be documented in a 30-day time period. Industry Work Plan Comment – Compliance Measures • Consider MISO's comment that the standard should be measured at the standard level rather than the individual requirement level. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Issues to be Considered by Drafting Team Project 2008-06 — Cyber Security		
Standard #	**Title**	
CIP-008-1	Cyber Security — Incident Reporting and Response Planning	
Issues	FERC Cyber NOPR Comments Paragraph 41 Add that a responsible entity must implement a plan, policy or procedure that it is required to develop. (CIP-002-009) Paragraph 48 Develop a self-certification process with more frequent certifications, either tied to target dates in the schedule or perhaps quarterly or semi-annual certifications. Paragraph 58 Remove references to the "reasonable business judgment" language. Paragraph 77 Treat instances where technical feasibility is invoked as exceptions that require certain alternative courses of action; Paragraph 77 Interpret the term "technical feasibility" narrowly as applying to the technical characteristics of existing assets and having no relation to the considerations of business judgment discussed above; Paragraph 79 Establish a structure to require accountability from those who rely on "technical feasibility" as the basis for an exception as discussed in Paragraph 79 of the NOPR. This proposed structure should include a review by senior management of the expediency and effectiveness of the manner in which a responsible entity has addressed each of these three proposed conditions. Paragraph 79 Require a responsible entity to report and justify to the ERO and the Regional Entity for approval each exception and its expected duration. In situations where any of the proposed conditions are not satisfied, the ERO or the Regional Entity would inform the responsible entity that its claim to an exception based on technical feasibility is insufficient and therefore not approved. Failure to timely rectify the deficiency would invalidate the exception for compliance purposes. Paragraph 82 Consider making "technically feasible," and derivative forms of that phrase as used in the CIP Reliability Standards, defined terms in NERC's glossary, pursuant to the prior clarifications, without any reference to reasonable business judgment. Paragraph 88 Consider the development and implementation of the NIST standards to determine if they contain provisions that will better protect the Bulk-Power System. Seek and consider comments from those federal entities (TVA and WAPA) on the effectiveness of the NIST standards and on any implementation issues. Paragraphs 330 Modify the Violation Risk Factors as directed in the NOPR list of proposed Actions. Paragraphs 77 Eliminate the "acceptance of risk" option from the CIP 83-86 Reliability Standards; Paragraphs 77/80 Develop an annual report that quantifies, on a wide-area basis, the frequency with which responsible entities invoke "technical feasibility"	

	or other provisions that produce the same outcome as discussed in Paragraphs 77 and 80 of the NOPR. The report should include aggregated information with sufficient detail for the Commission to understand the frequency in which specific provisions are being invoked as well as mitigation and remediation plans over time and by region Paragraph 270 Develop and include in CIP-008-1 language that takes into account a breach that may occur through cyber or physical means Paragraph 270 Harmonize, but not necessarily limit, the meaning of the term reportable incident with other reporting mechanisms, such as DOE Form 417 Paragraph 270 Recognize that the term "reportable incident" should not be triggered by ineffectual and untargeted attacks that proliferate on the internet Paragraph 280 Modify CIP-008-1 to require a responsible entity to contact appropriate government authorities and industry participants in the event of a Cyber Security Incident as soon as possible, but, in any event, within one hour of the event, even if it is a preliminary report. The reporting timeframe should run from the discovery of the incident by the responsible entity, and not the occurrence of the incident. Paragraph 286 Refine R2 to require responsible entities to maintain documentation of paper drills, full operational drills, and responses to actual incidents, all of which must include lessons learned. Paragraph 286 Require revisions to the Incident Response Plan to address these lessons learned. Paragraph 286 Provide guidance on the meaning of the term “full operational exercise.” Paragraph 286 Require responsible entities to perform a “full operational exercise” at least once every three years, or to fully document its reason for not conducting an exercise in full operational mode pursuant to the technical feasibility parameters discussed earlier in the NOPR. Industry Work Plan Comment – Compliance Measures • Consider MISO’s comment that the standard should be measured at the standard level rather than the individual requirement level. Other • Modify standard to conform to the latest version of NERC’s Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. FERC’s December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC’s December 20, 2007 Order, the Commission reversed NERC’s Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a “reliability gap” if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team

		responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Issues to be Considered by Drafting Team Project 2008-06 — Cyber Security	
Standard #	**Title**
CIP-009-1	Cyber Security — Recovery Plans for Critical Cyber Assets
Issues	FERC Cyber NOPR Comments Paragraph 41 Add that a responsible entity must implement a plan, policy or procedure that it is required to develop. (CIP-002-009) Paragraph 48 Develop a self-certification process with more frequent certifications, either tied to target dates in the schedule or perhaps quarterly or semi-annual certifications. Paragraph 58 Remove references to the "reasonable business judgment" language. Paragraph 77 Treat instances where technical feasibility is invoked as exceptions that require certain alternative courses of action; Paragraph 77 Interpret the term "technical feasibility" narrowly as applying to the technical characteristics of existing assets and having no relation to the considerations of business judgment discussed above; Paragraph 79 Establish a structure to require accountability from those who rely on "technical feasibility" as the basis for an exception as discussed in Paragraph 79 of the NOPR. This proposed structure should include a review by senior management of the expediency and effectiveness of the manner in which a responsible entity has addressed each of these three proposed conditions. Paragraph 79 Require a responsible entity to report and justify to the ERO and the Regional Entity for approval each exception and its expected duration. In situations where any of the proposed conditions are not satisfied, the ERO or the Regional Entity would inform the responsible entity that its claim to an exception based on technical feasibility is insufficient and therefore not approved. Failure to timely rectify the deficiency would invalidate the exception for compliance purposes. Paragraph 82 Consider making "technically feasible," and derivative forms of that phrase as used in the CIP Reliability Standards, defined terms in NERC's glossary, pursuant to the prior clarifications, without any reference to reasonable business judgment. Paragraph 88 Consider the development and implementation of the NIST standards to determine if they contain provisions that will better protect the Bulk-Power System. Seek and consider comments from those federal entities (TVA and WAPA) on the effectiveness of the NIST standards and on any implementation issues. Paragraphs 330 Modify the Violation Risk Factors as directed in the NOPR list of proposed Actions. Paragraphs 77 Eliminate the "acceptance of risk" option from the CIP 83-86 Reliability Standards; Paragraphs 77/80 Develop an annual report that quantifies, on a wide-area basis, the frequency with which responsible entities invoke "technical feasibility"

	or other provisions that produce the same outcome as discussed in Paragraphs 77 and 80 of the NOPR. The report should include aggregated information with sufficient detail for the Commission to understand the frequency in which specific provisions are being invoked as well as mitigation and remediation plans over time and by region Paragraphs 293 Explicitly require actual implementation when the "events or conditions of varying duration and severity" occur. Paragraph 303 R2 - Require a full operational exercise once every three years (unless an actual incident occurs), but to permit reliance on table-top exercises annually in other years. Further, we propose, in conjunction with the above proposed modification, that the ERO consider the appropriateness of a "technical feasibility" option, in the limited fashion proposed earlier in this NOPR. Paragraph 304 Either define in its Glossary the term "full operational exercise" or provide more direction directly in the Reliability Standard as to the parameters of the term. Paragraph 308 Modify Requirement R3 of CIP-009-1 to shorten the timeline for updating recovery plans to 30 days, while continuing to allow up to 90 days for completing the communications of that update to responsible personnel. Paragraph 312 R4 - Incorporate guidance that the backup and restoration processes and procedures required by Requirement R4 should include, at least with regard to significant changes made to the operational control system, verification that they are operational before the backups are stored or relied upon for recovery purposes. Paragraph 319 Provide direction that backup practices include regular procedures to ensure verification that backups are successful and backup failures are addressed, thus guaranteeing that backups are available for future use. Insertion of language such as, "backup procedures are to include regular verification of successful completion and procedures to address backup failures" would satisfy this goal. Paragraphs 297- Incorporate use of good forensic data collection practices into 298 R1 of this CIP Reliability Standard. Make clear that such practices should not impede or restrict system restoration and to consider whether it is necessary to include a "technical feasibility" provision. Industry Work Plan Comment – Compliance Measures • Consider MISO's comment that the standard should be measured at the standard level rather than the individual requirement level. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned

		physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Project 2008-08 EOP Violation Severity Levels Revisions

Standards Involved:

EOP-001-0 — Emergency Operations Planning
EOP-002-1 — Capacity and Energy Emergencies
EOP-003-1 — Load Shedding Plans
EOP-004-1 — Disturbance Reporting
EOP-005-1 — System Restoration Plans
EOP-006-1 — Reliability Coordination — System Restoration
EOP-008-0 — Plans for Loss of Control Center Functionality
EOP-009-0 — Documentation of Blackstart Generating Unit Test Results

Research Needed:

None

Brief Description:

The Federal Energy Regulatory Commission (FERC) in its Order on Compliance Filing dated June 7, 2007, directed NERC to replace the "Levels of Non-compliance" with "Violation Severity Levels" (VSLs) in the 83 previously approved reliability standards by March 1, 2008. Project 2007-23 Violation Severity Levels was initiated to respond to FERC's directive. The VSLs for all 83 "regulatory approved" standards plus the VSLs for NUC-001 (a total of 84 standards) were developed and balloted in conjunction with Project 2007-23 Violation Severity Levels using nine separate ballots. The ballot for the VSLs for the 8 Emergency Preparedness and Operations (EOP) reliability standards shown above failed to meet the required two-thirds majority of the weighted segment votes cast in the affirmative. As a result, the NERC Board of Trustees directed the Standards Committee to take the necessary steps needed to expedite the development of a revised group of EOP VSLs for filing with FERC.

Revise the VSLs for the 8 EOP reliability standards that failed to meet the required two-thirds majority of the weighted segment votes cast in the affirmative. The revised VSLs will be re-submitted to the industry for approval and, once approved, will be filed with the appropriate regulatory authorities as directed by the board.

Standards Development Status:

Project 2008-08 EOP Violation Severity Levels Revisions Web page

Project Schedule:

Project 2008-08 Project Schedule (TBD)

Target Completion Date:

TBD

Related Links:

Project 2008-08 Roster

Project 2008-12 Coordinate Interchange Standards

Standards Involved:

INT-001-3 — Interchange Transaction Tagging
INT-003-2 — Interchange Transaction Implementation
INT-004-1 — Interchange Transaction Modifications
INT-005-2 — Interchange Authority Distributes Arranged Interchange
INT-006-2 — Response to Interchange Authority
INT-007-1 — Interchange Confirmation
INT-008-2 — Interchange Authority Distributes Status
INT-009-1 — Implementation of Interchange
INT-010-1 — Interchange Coordination Exemptions

Research Needed:

None

Brief Description:

The modifications in the set of Coordinate Interchange Standards should address the following:

- Determine if the activities in the Coordinate Interchange standards correctly identify the responsible entity.
- Consider requiring the Sink Balancing Authority responsibility for Interchange Authority functions, using an interchange transaction tool process as defined in the latest approved version of the e-Tag Specifications.
- The existing requirements are tool-neutral - consider adding specific references to the e-Tagging process in the requirements
- Consider adding a requirement to have backup capability for use when the interchange transaction tool fails.
- Consider combining requirements into a fewer number of standards so that the resultant set of requirements follows a chronological sequence that is easier to follow.
- Address the directives issued by FERC in Order 693, and the stakeholder comments from the V0 drafting team and the Violation Risk Factor drafting team. (See Attachment 1)
- Determine if there is industry-wide support for the Interchange Subcommittee's Principles and definition supporting dynamic transfers and pseudo-ties and if there is support, modify the requirements and add definitions accordingly. Make other changes to the standards to bring them into conformance with the latest version of the Reliability Standards Development Procedure, Sanctions Guidelines and Uniform Compliance Monitoring and Enforcement Program.

The work in this project should be done in two phases, with the first phase focused solely on clarifying the applicability of each requirement in the existing set of standards. All other revisions should take place in a second phase.

Coordination with NAESB:

The NAESB Wholesale Electric Quadrant (WEQ) Standards Review Subcommittee (SRS) conducted an analysis of the NERC Reliability Standards Development Plan in order to identify those projects contained in the plan that may be appropriate for the industry, through NAESB, to develop parallel and complementary business practices. Below are NAESB's observations for this project.

Related NAESB WEQ Projects (See NAESB WEQ 2008 Annual plan):
- Annual Plan Item 1
- Annual Plan Item 3

Justification for NAESB consideration:
- Industry recommendations

SRS Recommendation:
- The WEQ SRS will coordinate with the JISWG on this project.

Standards Development Status:

Project 2008-12 Coordinate Interchange Standards Web page

Project Schedule:

Project 2008-12 Project Schedule (TBD)

Target Completion Date:

TBD

Related Links:

Project 2008-12 Roster

Issues to be Considered by Drafting Team Project 2008-12 — Coordinate Interchange Standards	
Standard #	**Title**
INT-001-2	Interchange Information
Issues	FERC Order 693 Disposition: Approve with modifications • Include a requirement that interchange information must be submitted for all point-to-point transfers entirely within a balancing authority area, including all grandfathered and "non-Order No. 888" transfers. • Consider Santa Clara's comments about the applicability of the LSE in the standard as part of the standards development process. Regional Difference to INT-001/4: WECC Tagging Dynamic Schedules and Inadvertent Payback Disposition: Not approved or remanded • Submit a filing within 90 days of the Order that provides the needed information or withdraws the regional variance. Regional Difference to INT-001/3: MISO Energy Flow Information Disposition: Approved V0 Industry Comments • R1 - Too stringent • R1 – Who tags dynamic schedules? • Load PSE responsibility is new restriction • Clarify tagging of reserves • R2.2 – 60 minute time frame questioned • Question on generation scheduling • Onerous to BA's • More commercial problem than reliability • Lack of compliance VRF comments • R1, 1.1, 2, 2.1, 2.2 – commercial and administrative Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied.

	Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject. NERC/NAESB Coordination • The SDT review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Interchange Schedule Interchange Transaction Interchange Transaction Tag (Tag) Request for Interchange Source BA Sink BA

Issues to be Considered by Drafting Team Project 2008-12 — Coordinate Interchange Standards	
Standard #	**Title**
INT-003-2	Interchange Transaction Implementation
Issues	FERC Order 693 Disposition: Approved Regional Difference to INT-001/3: MISO Energy Flow Information Disposition: Approved Regional Difference to INT-003: MISO/SPP Scheduling Agent Disposition: Approved Regional Difference to INT-003: MISO Enhanced Scheduling Agent Disposition: Approved VRF Comments • R1, 1.1, 1.1.2, 1.2 – commercial and administrative Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC/NAESB Coordination • The SDT review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Interchange Schedule Interchange Transaction Interchange Transaction Tag (Tag) Request for Interchange Source BA Sink BA

Issues to be Considered by Drafting Team Project 2008-12 — Coordinate Interchange Standards	
Standard #	**Title**
INT-004-1	Dynamic Interchange Transaction Modifications
Issues	FERC Order 693 Disposition: Approved • Consider adding levels of non-compliance to the standard. Regional Difference to INT-001/4: WECC Tagging Dynamic Schedules and Inadvertent Payback Disposition: Not approved or remanded • Submit a filing within 90 days of the Order that provides the needed information or withdraws the regional variance. V0 Industry Comments • Replace TSP with TOP • Need to address tag curtailment • Suggested non-compliance levels • Non-compliance based on % • Use WECC criteria VRF comments • R2, 2.2, 2.3 – commercial and administrative Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC/NAESB Coordination • The SDT review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Interchange Schedule Interchange Transaction Interchange Transaction Tag (Tag) Request for Interchange Source BA Sink BA

Issues to be Considered by Drafting Team Project 2008-12 — Coordinate Interchange Standards	
Standard #	**Title**
INT-005-2	Interchange Authority Distributes Arranged Interchange
Issues	FERC Order 693 Disposition: Approved • Consider adding levels of non-compliance to the standard. VRF comment • R5 – administrative Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC/NAESB Coordination • The SDT review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Interchange Schedule Interchange Transaction Interchange Transaction Tag (Tag) Request for Interchange Source BA Sink BA

<table>
<tr><th colspan="2">Issues to be Considered by Drafting Team
Project 2008-12 — Coordinate Interchange Standards</th></tr>
<tr><th>Standard #</th><th>Title</th></tr>
<tr><td>INT-006-2</td><td>Response to Interchange Authority</td></tr>
<tr><td>Issues</td><td>FERC Order 693
Disposition: Approve with modifications
• Include reliability coordinators and transmission operators as applicable entities.
• Require reliability coordinators and transmission operators to review energy interchange transactions from the wide-area and local area reliability viewpoints respectively and, where their review indicates a potential detrimental reliability impact, communicate to the sink balancing authorities' necessary transaction modifications before implementation.
• Consider the suggestions made by EEI and TVA and address questions raised by Entergy and Northern Indiana as part of the standard development process.

Other
• Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

NERC Audit and Observation Team
• Does confirmed action mean direct action needs to be taken or, does confirmed action mean that a process has been put in place that will take action and, the entity agrees with such since they have employed the program.

NERC/NAESB Coordination
• The SDT review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB:

Interchange Schedule
Interchange Transaction
Interchange Transaction Tag (Tag)
Request for Interchange
Source BA
Sink BA</td></tr>
</table>

Issues to be Considered by Drafting Team Project 2008-12 — Coordinate Interchange Standards		
Standard #	**Title**	
INT-007-1	Interchange Confirmation	
Issues	FERC Order 693 Disposition: Approved VRF comment • R1, 1.1, 1.3, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.4 – administrative Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC/NAESB Coordination • The SDT review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Interchange Schedule Interchange Transaction Interchange Transaction Tag (Tag) Request for Interchange Source BA Sink BA	

Issues to be Considered by Drafting Team Project 2008-12 — Coordinate Interchange Standards	
Standard #	**Title**
INT-008-2	Interchange Authority Distributes Status
Issues	FERC Order 693 Disposition: Approved • Consider APPA's suggestion to clarify what reliability entity the standard applies as part of the standard development process. VRF comments • R1.1.1 & 1.1.2 – commercial and administrative Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC/NAESB Coordination • The SDT review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Interchange Schedule Interchange Transaction Interchange Transaction Tag (Tag) Request for Interchange Source BA Sink BA

Issues to be Considered by Drafting Team Project 2008-12 — Coordinate Interchange Standards	
Standard #	**Title**
INT-009-1	Implementation of Interchange
Issues	FERC Order 693 • Consider APPA's suggestion to clarify what reliability entity the standard applies as part of the standard development process. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC/NAESB Coordination • The SDT review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Interchange Schedule Interchange Transaction Interchange Transaction Tag (Tag) Request for Interchange Source BA Sink BA

Issues to be Considered by Drafting Team Project 2008-12 — Coordinate Interchange Standards	
Standard #	**Title**
INT-010-1	Interchange Coordination Exemptions
Issues	FERC Order 693 Disposition: Approved • Consider Northern Indiana's and ISO-NE's suggestions in the standards development process. VRF comments • R1 & 3 – administrative Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC/NAESB Coordination • The SDT review the definitions of the following terms and coordinate with NAESB so that the definition of each term is consistent between NERC and NAESB: Interchange Schedule Interchange Transaction Interchange Transaction Tag (Tag) Request for Interchange Source BA Sink BA

Project 2009-01 Disturbance and Sabotage Reporting

Standards Involved:

CIP-001-0 — Sabotage Reporting
EOP-004-1 — Disturbance Reporting

Research Needed:

None

Brief Description:

The existing requirements need to be revised to be more specific – and there needs to be more clarity in what sabotage looks like.

CIP-001 may be merged with EOP-004 to eliminate redundancies. Acts of sabotage have to be reported to the DOE as part of EOP-004. Specific references to the DOE form need to be eliminated.

EOP-004 has some 'fill-in-the-blank' components to eliminate.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project has not started.

Project Schedule:

Project 2009-01 Project Schedule

Target Completion Date:

Fourth quarter of 2010

Related Links:

Project 2009-01 Roster

Issues to be Considered by Drafting Team Project 2009-01 — Disturbance and Sabotage Reporting	
Standard #	**Title**
CIP-001-0	Sabotage Reporting
Issues	FERC Order 693 Disposition: Approved with modifications • Consider the need for wider application of the standard. Consider whether separate, less burdensome requirements for smaller entities may be appropriate. • Define "sabotage" and provide guidance on triggering events that would cause an entity to report an event. • In the interim, provide advice to entities about the reporting of particular circumstances as they arise. • Consider FirstEnergy's suggestions to differentiate between cyber and physical security sabotage and develop a threshold of materiality. • Incorporate a periodic review or updating of the sabotage reporting procedures and for their periodic testing. Consider a staggered schedule of annual testing and formal review every two to three years. • Include a requirement to report a sabotage event to the proper government authorities. Develop the language to specifically implement this directive. • Explore ways to reduce redundant reporting, including central coordination of sabotage reports and a uniform reporting format. V0 Industry Comments • Object to multi-site requirement • Definition of sabotage required VRF comments • Adequate procedures will insure it is unlikely to lead to bulk electric system instability, separation, or cascading failures. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • Applicability — How does this standard pertain to Load Serving Entities, LSE's? • Registered Entities have sabotage reporting processes and procedures in place but not all personnel has been trained. • Question: How do you "and make the operator aware" • R4 — "What is meant by: "establish contact with the FBI". Is a phone number adequate? Many entities which call the FBI are referred back to the local authority. The AOT noted that on the FBI website it states to contact the local authorities. Is this a question for Homeland Security to deal with for us?" • R4 — Establish communications contacts, as applicable with local FBI and RAMP officials. Some entities are very remote and the sheriff is the only local authority does the FBI still need to be contacted?

	FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Issues to be Considered by Drafting Team Project 2009-01 — Disturbance and Sabotage Reporting	
Standard #	**Title**
EOP-004-1	Disturbance Reporting
Issues	FERC Order 693 Disposition: Approved with modification • Include any requirements for users, owners, and operators of the bulk power system to provide data that will assist NERC in the investigation of a blackout or disturbance. • Change NERC's Rules of Procedure to assure the Commission receives these reports in the same frame as the DOE. • Consider APPA's concern about generator operators and LSEs analyzing performance of their equipment and provide data and information on the equipment to assist others with analysis. • Consider all comments offered in a future modification of the reliability standard. Fill-in-the-Blank Team Comments • Consider changes to R1 and R3.4 to standardize the disturbance reporting requirements (requirements for disturbance reporting need to be added to this standard) • Regions currently have procedures, but not in the form of a standard. The drafting team will need to review regional requirements to determine reporting requirements for the North American standard. V0 Industry Comments • R3 – too many reports, narrow requirement to RC • How does this apply to generator operator? Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • R3.1 — Can there be a violation without an event? Event Analysis Team • Reliability Issue: Coordination and follow up on lessons learned from event analyses Consider adding to EOP-004 – Disturbance Reporting. Proposed requirement: Regional Entities (REs) shall work together with Reliability Coordinators, Transmission Owners, and Generation Owners to develop an Event Analysis Process to prevent similar events from happening and follow up with the recommendations. This process shall be defined within the appropriate NERC Standard. FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The

		distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Project 2009-02 Real-time Tools

Standards Involved:

BAL-002 — Disturbance Control Performance
BAL-005 — Automatic Generation Control
COM-001 — Telecommunications
EOP-003 — Load Shedding Plans
EOP-005 — System Restoration Plans
IRO-002 — Reliability Coordination – Facilities
IRO-003 — Reliability Coordination – Wide-area View
IRO-004 — Reliability Coordination – Operations Planning
IRO-005 — Reliability Coordination – Current-Day Operations
PRC-001 — System Protection Coordination
TOP-001 — Reliability Responsibilities and Authorities
TOP-002 — Normal Operations Planning
TOP-003 — Planned Outage Coordination
TOP-004 — Transmission Operations
TOP-005 — Operational Reliability Information
TOP-006 — Monitoring System Conditions
VAR-001 — Voltage and Reactive Control

Research Needed:

No additional research needed. The NERC Real-Time Tools Best Practices Task Force (RTBPTF) performed an extensive, three-year process of fact finding and analysis supported by the results of their Real-Time Tools Survey, the most comprehensive survey ever conducted of current electric industry practices.

The RTBPTF summarized their findings in a report titled *Real-Time Tools Survey Analysis and Recommendations* dated March 13, 2008. The report includes the RTBPTF's recommendations for minimum acceptable capabilities and best practices for real-time tools necessary to ensure reliable electric system operation and reliability coordination.

Brief Description:

The drafting team will implement certain recommendations of the RTBPTF's identified in their report titled *Real-Time Tools Survey Analysis and Recommendations* dated March 13, 2008. As the NERC reliability standards have continued to evolve since the work of the RTBPTF was initiated, the drafting team appointed for this project will need to review the recommendations of the RTBPTF relative to the current set of approved standards and propose modifications to the specific standards as appropriate.

This project will be responsive to the U.S.-Canada Power System Outage Task Force blackout recommendation 10: Establish Guidelines for Real-Time Operating Tools.

The RTBPTF makes major recommendations in three key areas to establish requirements that apply to reliability coordinators (RCs), transmission operators (TOPs), and other entities with similar responsibility:

1. ***Reliability Toolbox*** — Require five real-time tools as well as performance and availability metrics and maintenance practices for each. The required tools are:
    - Telemetry data systems
    - Alarm tools
    - Network topology processor
    - State estimator
    - Contingency analysis

2. ***Enhanced Operator Situational Awareness*** — Require standards and guidelines for situational awareness practices, including:
    - Power-flow simulations
    - Conservative operations plans
    - Load-shed capability awareness
    - Critical applications and facilities monitoring
    - Visualization techniques

3. ***Issues*** to enhance the effectiveness of real-time tools.

Standards Development Status:

Not yet started; scheduled to begin in 2009.

Project Schedule:

TBD

Target Completion Date:

TBD

Related Links:

TBD

Project 2009-03 Emergency Operations

Standards Involved:

EOP-001-0 — Emergency Operations Planning
EOP-002-2 — Capacity and Energy Emergencies
EOP-003-1 — Load Shedding Plans
IRO-001-1 — Reliability Coordination – Responsibilities and Authorities

Research Needed:

None

Brief Description:

The first three standards in the list above may be merged into a single standard. There are some requirements in IRO-001 that may be improved and merged into the new EOP standard

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Coordination with NAESB:

The NAESB Wholesale Electric Quadrant (WEQ) Standards Review Subcommittee (SRS) conducted an analysis of the NERC Reliability Standards Development Plan in order to identify those projects contained in the plan that may be appropriate for the industry, through NAESB, to develop parallel and complementary business practices. Below are NAESB's observations for this project.

Related NAESB WEQ Projects (See NAESB WEQ 2008 Annual plan):
Annual Plan Item 1

Justification for NAESB consideration:
WEQ SRS analysis
Industry recommendations

SRS recommendation:
Refer to Project 2007-18 Reliability Based Control

Standards Development Status:

Project has not started.

Project Schedule:

Project 2009-03 Project Schedule

Target Completion Date:

TBD

Related Links:

Project 2009-03 Roster

Issues to be Considered by Drafting Team Project 2009-03 — Emergency Operations	
Standard #	**Title**
EOP-001-0	Emergency Operations Planning
Issues	FERC Order 693 Disposition: Approved with modification • Include reliability coordinators as an applicable entity. • Consider Southern California Edison's and Xcel's suggestions in the standard development process. • Includes definitions of system states (e.g. normal, alert, emergency), criteria for entering into these states. And the authority that will declare them. • Consider a pilot program (field test) for the system states proposal. • Clarifies that the actual emergency plan elements, and not the "for consideration" elements of Attachment 1, should be the basis for compliance. V1 Industry Comments • Combine R4 & R5 • Revise R5 • Measures are really data retention requirements VRF comment • R1 – primarily administrative Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • R1 — BA shall have operating agreements with adjacent BA's that shall, at a minimum, contain provisions for emergency assistance, including provision to obtain emergency assistance from remote BA's. What is "emergency assistance"? Does a reserve sharing group constitute emergency assistance, or is it more then that?

Issues to be Considered by Drafting Team Project 2009-03 — Emergency Operations	
Standard #	**Title**
EOP-002-2	Capacity and Energy Emergencies
Issues	V0 Industry Comments • R3 should be applied to RC's • Re-wording in R7 • Measures aren't really measures but requirements • L4 non-compliance needs definition of time frame • Several wording changes to Attachment • Compliance not mapped to requirements VRF comments • R10 - This is a commercial and administrative ordering of curtailments. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Issues to be Considered by Drafting Team Project 2009-03 — Emergency Operations	
Standard #	**Title**
EOP-003-1	Load Shedding Plans
Issues	FERC Order 693 Disposition: Approved with modification • Develop specific minimum load shedding capability that should be provided and the maximum amount of delay before load shedding can be implemented based on overarching nationwide criteria that take into account system characteristics. • Require periodic drills of simulated load shedding. • Suggest a review of industry best practices in determining nationwide criteria. • Consider comments from APPA and ISO-NE in the standards development process. V0 Industry Comments • Move implementation requirements • Re-state purpose • Move to Policy 5 & 9 • Add UVLS VRF comments • R4 – Needs clarification • R6 - Failure to shed load in this condition can inhibit restoration. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit and Observation Team • The purpose of the standard states that the BA and TOP must have the capability and authority to shed load. What do we mean by capability? Is directing someone to take action to open breakers the same thing as capability?

Issues to be Considered by Drafting Team Project 2009-03 — Emergency Operations	
Standard #	**Title**
IRO-001-1	Reliability Coordination – Responsibilities and Authorities

Issues

Fill-in-the-Blank Team Comments

- Remove ", sub-region, or interregional coordinating group" from R1
- Consider removing "Standards of conduct are necessary to ensure the Reliability Coordinator does not act in a manner that favors one market participant over another." from the Purpose section of the standard.

V0 Industry Comments

- Inability to perform needs to be communicated
- What is meant by 'interest of other entity'?

VRF comments

- R6 - Since the RC must be NERC certified, it stands to reason that anyone performing RC tasks should be certified. However, since the RC still retains the accountability for actions, and requirement 4 handles the agreements, this requirement is a medium risk.

Other

- Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000

- In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see:
  - FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf)
  - NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf),
  - FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and
  - NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Project 2009-04 Phasor Measurement Units

Standards Involved:

New

Research Needed:

Analysis of existing research needs to be conducted.

Brief Description:

This is a new project that was identified in 2006 in support of a blackout recommendation. Several industry studies were recently issued and these studies need to be analyzed to determine appropriate requirements for a NERC standard.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project has not started.

Project Schedule:

Project 2009-04 Project Schedule

Target Completion Date:

Third quarter of 2011

Related Links:

Project 2009-04 Roster

Issues to be Considered by Drafting Team Project 2009-4 Phasor Measurement Units
This is a new standard — no history exists.

Project 2009-05 Resource Adequacy Assessments

Standards Involved:

New

Research Needed:

None

Brief Description:

This is a continuation of a project from 2006 that was delayed for higher priority projects. The purpose of this standard is to implement some of the recommendations from the Resource and Transmission Adequacy Task Force Report and the Gas/Electricity Interdependency Task Force Report approved by the NERC BOT in 2004 related to resource adequacy.

As envisioned, the standard will require entities to create metrics to assess resource adequacy that takes into account various factors such as fuel deliverability, performing resource adequacy assessments, sharing the results of those assessments. The standard would also require that resource adequacy assessments be conducted according to those metrics.

Standard Development Steps Completed:

The SAR has been posted for two comment periods but has not been finalized due to other conflicting higher priority projects. The SAR will be finalized and then work will be delayed on drafting the standard until 2008.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project has not started.

Project Schedule:

Project 2009-05 Project Schedule

Target Completion Date:

Third quarter of 2011

Related Links:

Project 2009-05 Roster

Issues to be Considered by Drafting Team Project 2009-05 — Resource Adequacy
Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned

Project 2010-01 Support Personnel Training

Standards Involved:

New

Research Needed:

None

Brief Description:

This is a new project that was identified in support of a blackout recommendation. Stakeholders indicated a preference for completing work on a standard for real-time system operators before beginning work on this standard, due to resource limitations. The standard will require the use of a systematic approach to determining training needs of generator operators and operations planning and support staff with a direct impact on the reliable operations of the bulk power system.

The standard will require that entities have evidence that this systematic approach is used and require that each responsible entity have evidence that each of applicable personnel is competent to perform each assigned task that is on its company-specific list of reliability-related tasks.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project has not started.

Project Schedule:

Project 2010-01 Project Schedule

Target Completion Date:

Fourth quarter of 2011

Related Links:

Project 2010-01 Roster

Issues to be Considered by Drafting Team Project 2010-01 — Support Personnel Training
FERC NOPR • Identify the expectations of the training for each job function; • Develop training programs tailored to each job function with consideration of the individual training needs of the personnel; • Expand the Applicability to include reliability coordinators, generator operators, and operations planning and operations support staff with a direct impact on the reliable operation of the Bulk-Power System; • Use the SAT methodology in its development of new training programs; and • (5) Include performance metrics associated with the effectiveness of the training program.

Project 2010-02 Connecting New Facilities to the Grid

Standards Involved:

FAC-001-0 — Facility Connection Requirements
FAC-002-0 — Coordination of Plans for New Facilities

Research Needed:

None

Brief Description:

A broad review needs to take place to ensure that all of the elements that should be addressed when a new facility is connected to the grid are included in the revised standard. New requirements are needed to require that the facility connection requirements are followed.

FAC-001 and FAC-002 have some 'fill-in-the-blank' components to eliminate.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Coordination with NAESB:

The NAESB Wholesale Electric Quadrant (WEQ) Standards Review Subcommittee (SRS) conducted an analysis of the NERC Reliability Standards Development Plan in order to identify those projects contained in the plan that may be appropriate for the industry, through NAESB, to develop parallel and complementary business practices. Below are NAESB's observations for this project.

Related NAESB WEQ Projects (See NAESB WEQ 2008 Annual plan):
Annual Plan Item 1

Justification for NAESB consideration:
Industry recommendations

SRS Recommendation:
The WEQ SRS will add this project to its watch list.

Standards Development Status:

Project has not started.

Project Schedule:

Project 2010-02 Project Schedule

Target Completion Date:

First quarter of 2011

Related Links:

Project 2010-02 Roster

Issues to be Considered by Drafting Team Project 2010-02 — Connecting New Facilities to the Grid	
Standard #	**Title**
FAC-001-0	Facility Connection Requirements
Issues	FERC Order 693 Disposition: Approved Fill-in-the-Blank Team Comments • Remove the phrase "to ensure compliance with NERC Reliability Standards and applicable Regional Reliability Organization, sub regional, Power Pool, and individual Transmission Owner planning criteria and facility connection requirements". • Document explicit definition of ride through capability for generators V0 Industry Comments • Not a NERC issue • Need to consider FERC, states, end-users • Should not degrade system on interconnection • Merge R1.1 & 1.2 • R1.3 – 5 days not enough • When is assessment required? • Wording on Level 4 Phase III/IV comments • There is no requirement that facility connection requirements be used. • There is no set criteria that must be included in the connection requirements – just a list of topics that must be addressed. • Consider revising this so that the RRO has some requirements for facility connections in addition to those of the transmission owner. • In a market environment it is very possible that not every generator will provide Frequency Response (FRR) services. Thus, the governor and governor deadband should be a requirement to interconnect to a power system. Generators that provide FRR shall have responsive governor and prime mover Industry Work Plan Comment • Exercise care that the new standard focuses on reliability issues and does not replace interconnection agreements that are tariff-related Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2010-02 — Connecting New Facilities to the Grid	
Standard #	**Title**
FAC-002-0	Coordination of Plans for New Generation, Transmission, and End-User Facilities
Issues	FERC Order 693 Disposition: Approved with modifications • Consider FirstEnergy's suggestion to include a reference to TPL-004-0. • Amend requirement R1.4 to require evaluation of system performance under both normal and contingency conditions by referencing TPL-001 through TPL-003. • Address other commenter's concerns in future revisions to the standard. Fill-in-the-Blank Team Comments • Remove "and applicable Regional, sub regional, Power Pool, and individual system planning criteria and facility connection requirements" from R1.2. • Consider removing/ modifying R1.4, as it is redundant with the TPL standard, • Coordinate with FAC-001, and • Review FERC rule on interconnecting generators and see what parts impact this standard. V0 Industry Comments • Add TO, RRO • Use 30 days throughout • What is Measure? • Shouldn't impact TTC Phase III/IV comments • This standard requires facility owners to work together with the Planning Authority and Transmission Planner to do an assessment to verify there is no adverse impact on reliability before a new facility can be connected to the grid. There is no obvious connection to FAC-001. • The standard does not involve the RRO in the coordination effort – if the FM is revised, the requirements should probably involve the RRO. • The assessment is done by the PA and/or TP VRF comment • R1.2 – Ambiguous • Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned Industry Work Plan Comment • Exercise care that the new standard focuses on reliability issues and does not replace interconnection agreements that are tariff-related Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000

	• In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Project 2010-03 Modeling Data

Standards Involved:

MOD-010-0 — Steady-State Data for Transmission System Modeling and Simulation
MOD-011-0 — Regional Steady-State Data Requirements and Reporting Procedures
MOD-012-0 — Dynamics Data for Transmission System Modeling and Simulation
MOD-013-1 — Maintenance and Distribution of Dynamics Data Requirements and Reporting Procedures
MOD-014-0 — Development of Interconnection-Specific Steady State System Models
MOD-015-0 — Development of Interconnection-Specific Dynamics System Models
PRC-013-0 — Special Protection System Database
PRC-015-0 — Special Protection System Data and Documentation
PRC-020-1 — Under-Voltage Load Shedding Program Database
PRC-021-1 — Under-Voltage Load Shedding Program Data

Research Needed:

18 months study for dynamics modeling of load in simulations and analyses

Brief Description:

This is one of two projects aimed at identifying all the 'data provision' requirements and consolidating the requirements into fewer standards. Research is needed to clearly identify what data is needed to accurately model load in simulations and analyses. The requirements need to be more specific to clearly identify the format, etc., for providing data.

As envisioned, this project will result in the elimination of most if not all region-specific requirements and the revised requirements would include much more specificity. MOD-010 through MOD-015 has some 'fill-in-the-blank' components to eliminate.

Many of the requirements need to be realigned so that the data that is needed is provided to the entity that needs the data. In several of the existing standards, the data is provided to the RRO who then provides the data to the Planning Authority or other entities.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project has not started.

Project Schedule:

Project 2010-03 Project Schedule

Target Completion Date:

First quarter of 2011

Related Links:

Project 2010-03 Roster

Issues to be Considered by Drafting Team Project 2010-03 — Modeling Data	
Standard #	**Title**
MOD-010-0	Steady-State Data for Modeling and Simulation of the Interconnected Transmission System
Issues	FERC Order 890 • 290. The Commission directs public utilities, working through NERC, to modify the reliability standards MOD-010 through MOD-025 to incorporate a requirement for the periodic review and modification of models for (1) load flow base cases with contingency, subsystem, and monitoring files, (2) short circuit data, and (3) transient and dynamic stability simulation data, in order to ensure that they are up to date. This means that the models should be updated and benchmarked to actual events. We find that this requirement is essential in order to have an accurate simulation of the performance of the grid and from which to comparably calculate ATC, therefore increasing transparency and decreasing the potential for undue discrimination by transmission providers. FERC Order 693 Disposition: Approve with modifications • Require users, owners, and operators to submit data to the regional entities as needed for modeling studies and assessments. • Require transmission planners to provide the contingency lists they use in performing system operation and planning studies. • Address critical energy infrastructure confidentiality issues as part of the standard development process. • Expand the applicability to include transmission operators and the planning authority. Fill-in-the-Blank Team Comments • Review MOD-010, MOD-011, MOD-012, and MOD-013 concurrently for modeling requirements and reporting. • Coordinate the revision of this standard with the revision to MOD-011. MOD-011 needs to be written as a North American standard with requirements for each interconnection. Once MOD-011 is modified, the only changes needed to MOD-010 are the references to the appropriate requirements in MOD-011. • This standard is directly related to MOD-011. V0 Industry Comments • Not a standalone standard • Don't need schedules for transactions within RTO • Confidentiality needs not cited • Non-compliance does not have time elements • Don't provide data to NERC Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2010-03 — Modeling Data	
Standard #	**Title**
MOD-011-0	Maintenance and Distribution of Steady-State Data Requirements and Reporting Procedures
Issues	FERC Order 693 Disposition: Not Approved or Remanded. • Expand the applicability to include the planning authority. • Develop a work plan and submit a compliance filing that will facilitate the ongoing collection of the steady-state modeling and simulation data specified in this standard. Fill-in-the-Blank Team Comments • Review MOD-010, MOD-011, MOD-012, and MOD-013 concurrently for modeling requirements and reporting. • Coordinate the revision of this standard with the revision to MOD-010. MOD-011 needs to be written as a North American standard with requirements for each interconnection. • This should be a North American Standard containing requirements which are interconnection-wide. • MOD-010 and 011 are related. This is the MMWG work for the eastern interconnection. • Revise NERC MOD-011 to clarify that the data reporting requirements must be uniform across each interconnection. V0 Industry Comments • Not a standalone standard • Add equipment types and variables • Confidentiality of data • Consistency across standards for non-compliance • Time element not cited in non-compliance • Locations of substations should be deleted • Several semantics issues Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2010-03 — Modeling Data	
Standard #	**Title**
MOD-012-0	Dynamics Data for Modeling and Simulation of the Interconnected Transmission System
Issues	FERC Order 693 Disposition: Approve with modifications • Require users, owners, and operators to submit data to the regional entities as needed for modeling studies and assessments. • Provide a list of faults and disturbances used in performing dynamics system studies for operation and planning. • Address critical energy infrastructure confidentiality issues as part of the standard development process. • Expand the applicability to include transmission operators, planning authorities, and transmission planners. Fill-in-the-Blank Team Comments • Review MOD-010, MOD-011, MOD-012, and MOD-013 concurrently for modeling requirements and reporting. • Coordinate the revision of this standard with the revision to MOD-013. MOD-013 needs to be written as a North American standard with requirements for each interconnection. Once MOD-013 is modified, the only changes needed to MOD-012 are the references to the appropriate requirements in MOD-013. • This standard is directly related to MOD-013. V0 Industry Comments • Not a standalone standard • Consistency of non-compliance • Confidentiality of data • Time element missing in non-compliance Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2010-03 — Modeling Data	
Standard #	**Title**
MOD-013-1	Maintenance and Distribution of Dynamics Data Requirements and Reporting Procedures
Issues	FERC Order 693 Disposition: Not Approved or Remanded. • Permit entities to estimate dynamics stat if they are unable to obtain unit specific information. • Require verification of the dynamic models with actual disturbance data. • Expand the applicability to include transmission operators, planning authorities, and transmission planners. • Develop a work plan and submit a compliance filing that will facilitate the ongoing collection of the dynamics modeling and simulation data specified in this standard. Fill-in-the-Blank Team Comments • Review MOD-010, MOD-011, MOD-012 and MOD-013 concurrently for modeling requirements and reporting. • Revise MOD-013 to clarify that the data reporting requirements must be uniform across each interconnection. • This should be a North American Standard containing requirements which are interconnection-wide. • MOD-012 and MOD-013 are related. This is the MMWG work for the Eastern Interconnection. V0 Industry Comments • Not a standalone standard • Confidentiality of data • Timing element not mentioned in non-compliance • 5 business days not sufficient • Consistency in non-compliance • Several semantics issues Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2010-03 — Modeling Data	
Standard #	**Title**
MOD-014-0	Development of Steady-State System Models
Issues	FERC Order 693 Disposition: Not Approved or Remanded. • Require models to be validated against actual system response. • If model output is not within the accuracy required, the model shall be modified to achieve the necessary accuracy. • Require users, owners, and operators to provide the validated models to regional reliability organizations. • Develop a work plan that will facilitate ongoing validation of steady-state models and submit a compliance filing to the Commission. V0 Industry Comments • Solved cases should not have violations • Define near-term vs. long-term • Consistency of non-compliance • Timing element missing in non-compliance Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2010-03 — Modeling Data		
Standard #	**Title**	
MOD-015-0	Development of Dynamics System Models	
Issues	FERC Order 693 Disposition: Not Approved or Remanded. • Require actual system events be simulated and dynamics system model output be validated against actual system response. • Require users, owners, and operators to provide the validated models to regional entity. • Develop a work plan that will facilitate ongoing validation of dynamics models and submit a compliance filing to the Commission. V0 Industry Comments • Confidentiality of data • Timing element of non-compliance • Consistency of non-compliance Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	

Issues to be Considered by Drafting Team Project 2010-03 — Modeling Data		
Standard #	**Title**	
PRC-013-0	Special Protection System Database	
Issues	FERC Order 693 Disposition: Not Approved or Remanded. • Consider APPA's suggestions for interconnection-wide consistency in the standards development process. Fill-in-the-Blank Team Comments • Review PRC-013 and PRC-015 together to properly reference regional standards (see notes of PRC-015 for options). • Related to PRC-015. V0 Industry Comments • Not a standalone standard • Define evidence Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	

Issues to be Considered by Drafting Team Project 2010-03 — Modeling Data		
Standard #		**Title**
PRC-015-0		Special Protection System Data and Documentation
Issues	FERC Order 693 Disposition: Approved Fill-in-the-Blank Team Comments • Review PRC-013 and PRC-015 together to properly reference regional standards (see notes of PRC-015 for options). • Tied to PRC-013. • Consider impact of removing R1.2 from PRC-012-0 and revision of PRC-013-0, R1.1, 1.2, & 1.3 to include a specific list of items to be included in the RRO SPS database. The same list could be added to PRC-015, R1.1. However, it may be cleaner to move PRC-015-0, R1.1 and the data portion of R1.3 to PRC-013. (Note: revisions to PRC-012 are identified for a separate drafting team and are expected to take place after revisions to PRC-013 and PRC-015 are completed.) V0 Industry Comments • Already covered elsewhere • Define evidence Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.	

Issues to be Considered by Drafting Team Project 2010-03 — Modeling Data	
Standard #	**Title**
PRC-020-1	Under-Voltage Load Shedding Program Database
Issues	FERC Order 693 Disposition: Not Approved or Remanded. Phase III/IV comments • The reliability-related need for the RRO to have the data isn't clear Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2010-03 — Modeling Data	
Standard #	**Title**
PRC-021-1	Under-Voltage Load Shedding Program Data
Issues	FERC Order 693 Disposition: Approved. Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Project 2010-04 Demand Data

Standards Involved:

MOD-016-1 — Actual and Forecast Demands, Net Energy for Load, Controllable DSM
MOD-017-0 — Aggregated Actual and Forecast Demands and Net Energy for Load
MOD-018-0 — Reports of Actual and Forecast Demand Data
MOD-019-0 — Forecasts of Interruptible Demands and DCLM Data
MOD-020-0 — Providing Interruptible Demands and DCLM Data
MOD-021-0 — Accounting Methodology for Effects of Controllable DSM in Forecasts

Research Needed:

None

Brief Description:

This is one of two projects aimed at identifying all the 'data provision' requirements and consolidating the requirements into fewer standards. As envisioned, this project will result in two standards – with MOD-016 through MOD-020 in a single standard, and MOD-021 in a separate standard. The requirements need to be more specific to clearly identify the format, etc., for providing data.

MOD-016, MOD-017, and MOD-019 have some 'fill-in-the-blank' components to eliminate.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project has not started.

Project Schedule:

Project 2010-04 Project Schedule

Target Completion Date:

Second quarter of 2011

Related Links:

Project 2010-04 Roster

Issues to be Considered by Drafting Team Project 2010-04 — Demand Data	
Standard #	**Title**
MOD-016-1	Documentation of Data Reporting Requirements for Actual and Forecast Demands, net Energy for Load, and Controllable Demand-Side Management

Issues

FERC Order 693

Disposition: Approve with modifications

- Modify the definition of DSM to include any other entities that undertake activities or programs to influence the amount or timing of electricity they use without violating other reliability standards requirements.
- Expand the applicability to include transmission planners.

Fill-in-the-Blank Team Comments

- Review MOD-016, MOD-017, and MOD-019 concurrently to develop uniform North American Standards for reporting of actual and forecast demand and NEL data to be reported to RRO for system modeling and analysis.
- Standard should address quality and accuracy of the forecast; need to avoid double-counting, etc.
- MOD-016 is the NERC requirement on region; MOD-017 and MOD-019 are the entity requirements to comply with the region. Includes MOD-016 through MOD-021.

V0 Industry Comments

- Weather data needed
- Consistency in non-compliance

Phase III/IV comments

- Purpose – revise to add 'best available' where noted. Ensure that accurate, actual demand data is available to support assessments and validation of past events and databases. Forecast demand data is needed to perform future system assessments to identify the need for system reinforcements for continued reliability. In addition, to assist in proper real-time operating, best available load information related to controllable demand-side management (DSM) programs is needed. A clear definition of forecast demand is needed.
- R1 - Transmission providers who serve customers who have retail access may have difficulty obtaining documentation identifying the scope and details of actual and forecast data. These transmission providers' can provide the actual and forecast data using their own data sets, but they may not have access to an individual retail choice customer's documentation for historical and forecast data. Often concerns about loss of competitive advantage or confidentiality issues are expressed about providing the data to the transmission provider.
- R1.2 – needs to identify the type of forecast
- R1.2 - revise to recognize that service territories may host multiple LSEs
- R2 and R3 – clarify what entity is providing the approval
- Add specificity to identify what must be considered in identifying the demand load forecast– is this expected to be the 'peak' demand and should it include such factors as economic, demographic, and customer trends; conservation, improvements in the efficiency of electrical energy use, and other changes in the end uses of electricity; and weather effects? Should the peak demand load forecast have a 50% probability of not being exceeded (expected peak demand)? This load forecast is commonly referred to as the 1-in-2 peak load

	forecast. • There is a disconnect between LSE load forecasting and planning and the control area reporting as a major issue in the reporting of quality load and resources data to WECC. Confidentiality issues and other communication issues have contributed to making this an issue of concern therefore the following are action needs: o Expand the applicability to include Load Serving Entities and Purchasing/Selling entities o Explicitly state that LSEs are required to provide the documentation for actual and load forecast data for the loads they serve to the PAs and RROs. o Where Purchasing/ Selling entities are retail access customers who perform load forecasts, specify that these entities also need to provide similar documentation to PAs and RROS Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2010-04 — Demand Data	
Standard #	**Title**
MOD-017-0	Aggregated Actual and Forecast Demands and Net Energy for Load

Issues

FERC Order 693
Disposition: Approve with modifications

- Include requirements for reporting of temperature and humidity along with the peak loads.
- Reporting of accuracy, error and bias of load forecasts compared to actual loads taking temperature and humidity conditions into account.
- Address methods to correct forecasts to minimize prior inaccuracies, errors, and bias.
- Expand the applicability to include transmission planners.

Fill-in-the-Blank Team Comments

- Review MOD-016, MOD-017, and MOD-019 concurrently to develop uniform North American Standards for reporting of actual and forecast demand and NEL data to be reported to RRO for system modeling and analysis.
- Correct reference to MOD-016 when MOD-016 is revised (MOD-016-1)

Comment from draft SAR on Planning Authority

- Provide clarity where the Planning Authority is mentioned

Other

- Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000

- In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see:
  - FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf)
  - NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf),
  - FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and
  - NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

<table>
<tr><th colspan="3">Issues to be Considered by Drafting Team
Project 2010-04 — Demand Data</th></tr>
<tr><th colspan="2">Standard #</th><th>Title</th></tr>
<tr><td colspan="2">MOD-018-0</td><td>Treatment of Nonmember Demand Data and How Uncertainties are Addressed in the Forecasts of Demand and Net Energy for Load</td></tr>
<tr><td>Issues</td><td colspan="2">FERC Order 693
Disposition: Approved
• Provide a work plan and compliance filing regarding the collection of information specified for standards that are deferred.

V0 Industry Comments
• Need to define uncertainty
• Confidentiality of data

Comment from draft SAR on Planning Authority
• Provide clarity where the Planning Authority is mentioned

Other
• Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000
• In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see:
• FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf)
• NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf),
• FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and
• NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.</td></tr>
</table>

Issues to be Considered by Drafting Team Project 2010-04 — Demand Data		
Standard #	**Title**	
MOD-019-0	Reporting of Interruptible Demands and Direct Control Load Management	
Issues	FERC Order 693 Disposition: Approve with modifications • Require users, owners, and operators to provide to the regional entity information related to forecasts of interruptible demands and direct control load management. • Require reporting of the accuracy, error, bias of controllable load forecasts. • Analyze differences between actual and forecasted demands for five years of actual controllable load and identify what corrective actions should be taken to approve controllable load forecasting for the 10-year planning horizon. Fill-in-the-Blank Team Comments • Review MOD-016, MOD-017, and MOD-019 concurrently to develop uniform North American Standards for reporting of actual and forecast demand and NEL data to be reported to RRO for system modeling and analysis. • Correct reference to MOD-016 when MOD-016 is revised (MOD-016-1) V0 Industry Comments • Level 4 non-compliance is harsh • Confidentiality of data Comment from draft SAR on Planning Authority • Provide clarity where the Planning Authority is mentioned Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000 • In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see: • FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf) • NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf), • FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and • NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.	

Issues to be Considered by Drafting Team Project 2010-04 — Demand Data	
Standard #	**Title**
MOD-020-0	Providing Interruptible Demands and Direct Control Load Management Data to System Operators and Reliability Coordinators

Issues

FERC Order 693
Disposition: Not Approved or Remanded.

- Require reporting of the accuracy, error, and bias of controllable load forecasts.

Other

- Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

FERC's December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000

- In FERC's December 20, 2007 Order, the Commission reversed NERC's Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a "reliability gap" if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see:
  - FERC's December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf)
  - NERC's March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf),
  - FERC's April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and
  - NERC's July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Issues to be Considered by Drafting Team Project 2010-04 — Demand Data	
Standard #	**Title**
MOD-021-0	Documentation of the Accounting Methodology for the Effects of Controllable Demand-Side Management in Demand and Energy Forecasts

Issues

FERC Order 693

Disposition: Approve with modifications

- Require users, owners, and operators to provide to the regional entity information related to this standard.
- Standardize principles on reporting and validation of DSM program information.
- Allow resource planners to analyze the causes of differences between actual and forecasted demands, and identify any corrective actions that should be taken to improve forecasted demand responses for future forecasts.
- Modify the title and purpose statement to remove the word “controllable”.

Comment from draft SAR on Planning Authority

- Provide clarity where the Planning Authority is mentioned

Other

- Modify standard to conform to the latest version of NERC’s Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

FERC’s December 20, 2007 and April 4, 2008 Orders in Docket Nos. RC07-004-000, RC07-6-000, and RC07-7-000

- In FERC’s December 20, 2007 Order, the Commission reversed NERC’s Compliance Registry decisions with respect to three load serving entities in the ReliabilityFirst (RFC) footprint. The distinguishing feature of these three LSEs is that none owned physical assets. Both NERC and RFC assert that there will be a “reliability gap” if retail marketers are not registered as LSEs. To avoid a possible gap, a consistent, uniform approach to ensure that appropriate Reliability Standards and associated requirements are applied to retail marketers must be applied. Each drafting team responsible for reliability standards applicable to LSEs is to review and change as necessary, requirements in the applicable reliability standards to address the issues surrounding accountability for loads served by retail marketers/suppliers. For additional information see:
  - FERC’s December 20, 2007 Order (http://www.nerc.com/files/LSE_decision_order.pdf)
  - NERC’s March 4, 2008 (http://www.nerc.com/files/FinalFiledLSE3408.pdf),
  - FERC’s April 4, 2008 Order (http://www.nerc.com/files/AcceptLSECompFiling-040408.pdf) and
  - NERC’s July 31, 2008 (http://www.nerc.com/files/FinalFiled-CompFiling-LSE-07312008.pdf) compliance filings to FERC on this subject.

Project 2010-05 Protection Systems

Standards Involved:

PRC-003-1 — Regional Requirements for Transmission and Generation Protection System Misoperations
PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations
PRC-012-0 — Special Protection System Review Procedure
PRC-014-0 — Special Protection System Assessment
PRC-016-0 — Special Protection System Misoperations

Research Needed:

None

Brief Description:

Consideration should be given to merging some of the standards to eliminate the need for cross-referencing.

PRC-003, PRC-004, PRC-014, and PRC-016 have some 'fill-in-the-blank' components to eliminate.

PRC-012 is one of the few 'fill-in-the-blank' standards that was identified by the Regional Reliability Standards Working Group as a standard that has some requirements that need to remain in regional standards.

The development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards.

Standards Development Status:

Project has not started.

Project Schedule:

Project 2010-05 Project Schedule

Target Completion Date:

Second quarter of 2011

Related Links:

Project 2010-05 Roster

Issues to be Considered by Drafting Team Project 2010-05 — Protection Systems	
Standard #	**Title**
PRC-003-1	Regional Procedure for Analysis of Misoperations of Transmission and Generation Protection Systems
Issues	FERC Order 693 Disposition: Not Approved or Remanded. • Consider if greater consistency can be achieved in the standard as suggested by APPA. Fill-in-the-Blank Team Comments • Review PRC-003 and PRC-004 together to identify the specific requirements of the functional entities (include specific requirements for each functional entity). • This is a North American Standard as written which places requirements on the regions to develop a procedure. However, PRC-004 requires functional entities to comply with the procedures the RROs develop. Craft a new PRC-003 as a North American standard containing the specific requirements for each functional entity. • Modify PRC-003 to include specific requirements for each functional entity. Each of the regional plans needs to be reviewed to determine what should be included in the North American standard. The current PRC-003 defines requirements for RROs. The drafting team should revise PRC-004 to include proper references to the new PRC-003. V0 Industry Comments • Need to define evidence • Change wording to reporting instead of monitoring Phase III/IV comments • Enhance the applicability section to clarify that the systems addressed by the requirements are limited to: o All transmission circuits 200 kV and above o All transmission circuits 100 kV to 200 kV operationally significant circuits, as defined by the RROs o Generator protection systems, whose misoperations impact the bulk electric system • The RRO should be required to demonstrate that the requirements developed in accordance with R1 produce the desired result. • In R1.2 change format to content Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2010-05 — Protection Systems	
Standard #	**Title**
PRC-004-1	Analysis and Mitigation of Transmission and Generation Protection Misoperations

Issues	FERC Order 693 Disposition: Approve • Consider ISO-NE's suggestion that LSEs and transmission operators should be listed as applicable entities. • The regional entity should develop procedures for corrective action plans. Fill-in-the-Blank Team Comments • Review PRC-003 and PRC-004 together to identify the specific requirements of the functional entities. • See notes for PRC-003-1. • Coordinate the revision of this standard with the revision to standard PRC-003. PRC-003 needs to be written as a North American standard with requirements for each functional entity as appropriate. Once PRC-003 is modified, the only changes needed to PRC-004 are the references to the appropriate requirements in PRC-003. V0 Industry Comments • Levels of non-compliance need to be redefined Phase III/IV comments • This standard should apply to all protection systems on the Bulk Electric System (BES) not just those that 'impact' the BES Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure. NERC Audit Observation Team • "Document the process" • R2 — The Generator Owner shall analyze its generator protection system misoperations and implement corrective action plans to avoid future misoperations.

Issues to be Considered by Drafting Team Project 2010-05 — Protection Systems	
Standard #	**Title**
PRC-012-0	Special Protection System Review Procedure
Issues	FERC Order 693 Disposition: Not Approved or Remanded. • Consider APPA's suggestions for interconnection-wide consistency in the standards development process. Fill-in-the-Blank Team Comments • Review PRC-012 and PRC-016 together to properly reference regional standards. • Modify R1 to require each Region to have a regional standard, and • Identify what elements (if any) of SPS schemes should be included in the North American standard and what elements should be included in the regional standards. • Development of regional standards needs to be coordinated with Regional entities. Regional entities should begin process for developing regional standards once the drafting team for the North American standard has determined what elements of SPS schemes should be included in the continent-wide standard and what elements should be included in the regional standards. • PRC-012 will be a continent-wide standard supported by Regional Reliability Standards. • PRC-012 is related to PRC- 016. Justified as regional standard; network specific. • Consider removing R1.6 and capitalize "Misoperation" in the current R1.7 as "misoperation" has been added to the glossary of the standards manual. • Also consider: R1 needs to be changed to state Regional Standard instead of Regional criteria (once they become standards). • Consider removing R1.2 from PRC-012-0 (see notes for PRC-015 for additional details. Make sure data requirements have been addressed adequately in PRC-013 and PRC-015 such that R1.2 of PRC-012 can be removed). V0 Industry Comments • Should be RA and not RRO • Levels of compliance need to differentiate severity of different items within requirements Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2010-05— Protection Systems	
Standard #	**Title**
PRC-014-0	Special Protection System Assessment
Issues	FERC Order 693 Disposition: Not Approved or Remanded. • Consider APPA's suggestions for interconnection-wide consistency in the standards development process. V0 Industry Comments • Already covered elsewhere • Assessment should be by TO or TP, not RRO Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Issues to be Considered by Drafting Team Project 2010-05 — Protection Systems	
Standard #	**Title**
PRC-016-0	Special Protection System Misoperations
Issues	FERC Order 693 Disposition: Approved Fill-in-the-Blank Team Comments • Review PRC-012 and PRC-016 together to properly reference regional standards (see notes of PRC-015 for options). • Tied to PRC-012. V0 Industry Comments • Not really a standalone standard • Define evidence • Define what makes up an SPS • Only need evidence that action was taken Other • Modify standard to conform to the latest version of NERC's Reliability Standards Development Procedure, the NERC Standard Drafting Team Guidelines, and the ERO Rules of Procedure.

Project 2011-01 Equipment Monitoring and Diagnostic Devices

Standards Involved:

New

Research Needed:

None

Brief Description:

This project was proposed Mr. R. W. Kenyon, J.D., P.E. during the 2008 revision of the Reliability Standards Development Plan.

The drafting team will propose Reliability Standard(s) covering the application of major equipment monitoring and diagnostic devices and procedures. As proposed by Mr. Kenyon, the Reliability Standard(s) will address dissolved gas and moisture sampling processes and the application on on-line monitoring devices to detect incipient faults within BES major components, such as EHV transformers. These processes and devices enable the equipment owner to detect evolving internal faults, allowing corrective action under controlled conditions. In some instances, early warning of evolving faults can permit field repair of the unit, avoiding a system fault and destruction of a major piece of equipment. In other circumstances, the warning obtained permits the equipment owner to monitor the situation and to schedule unit replacement in a deliberate, controlled manner. Again, occurrence of a major system fault and unscheduled loss of a major unit can be avoided. Obviously, such measures can contribute significantly to reliability of the Bulk Electric System.

Ideally, the proposed Reliability Standard(s) would make the application of this technology mandatory for classes of critical equipment, with EHV transformers and shunt reactors an obvious example. Similar diagnostic approaches could be taken on critical EHV and/or major generator Gas Insulated Switchgear. The general approach could follow PRC-005, where the owner must have a system, but particulars are left to the equipment owner. The proposed Reliability Standard(s) could extend to other equipment condition monitoring such as Doble testing.

In many instances, equipment owners already recognize the value of major equipment monitoring and have equipment and/or procedures in place addressing this technology. However, there is far less assurance that monitoring equipment is properly maintained, that scheduled routine sampling is being fully performed, and that full use is being made of data obtained. Again, as with the Protective Relay Standard PRC-005, the proposed Reliability Standard(s) would contribute to insuring that equipment owners have a program addressing this technology and are indeed following their program. In other instances, equipment owners without such equipment might be obligated to establish a monitoring program.

Standards Development Status:

Not yet started.

Project Schedule:

TBD

Target Completion Date:

TBD

Related Links:

TBD

NERC

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Reliability Standards Development Plan: 2009–2011

Volume III
Regional Reliability Standards Projects

September 22, 2008

to ensure the reliability of the bulk power system

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Introduction

NERC's Rules of Procedure Section 300 allows for a regional entity to develop regional reliability standards. A regional entity developing regional reliability standards must adhere to a NERC-approved regional reliability standards development procedure when developing its regional reliability standards. Each regional entity's regional standards development procedure is in Exhibit C of its regional delegation agreement with NERC.

NERC shall rebuttably presume that a regional reliability standard developed by a regional entity organized on an interconnection-wide basis in accordance with a regional reliability standards development process approved by NERC is just, reasonable, and not unduly discriminatory or preferential, and in the public interest, and consistent with such other applicable standards of governmental authorities. Regional reliability standards that are not proposed to be applied on an interconnection-wide basis are not presumed to be valid but may be demonstrated by the proponent to be valid. NERC's process for reviewing and approving proposed regional standards is delineated in its rules of procedure.

No regional reliability standard shall be effective within a region unless approved and filed by NERC with the Commission and the applicable authorities in Canada and Mexico and approved by such regulatory authorities. Regional reliability standards, when approved by FERC and the applicable authorities in Canada and Mexico, shall be made part of the body of NERC reliability standards and shall be enforced upon all applicable bulk-power system owners, operators, and users within the applicable regional entity's region, regardless of membership in the region.

Regional reliability standards shall provide for as much uniformity as possible with reliability standards across the interconnected bulk power system of the North American continent. A regional reliability standard shall be:

- more stringent than a continent-wide reliability standard, including regional standards that address matters that continent-wide reliability standards do not; or
- necessitated by a physical difference in the bulk power system.

This Volume III of NERC's Reliability Standards Development Plan identifies the standards anticipated to be developed by the individual regions over the next three years. With the exception of regional standards developed in support of continent-wide standards, the regional entities may independently initiate regional standards development and forward such standards to NERC for review and approval. NERC has identified 19 regional standards that are currently under development as listed in the index that follows this discussion. Additionally, four continent-wide standards projects identified in Volume II may require each regional entity to develop a companion regional standard. The NERC continent-wide projects that may require each regional entity to develop companion regional standards are:

Project 2007-01 — Underfrequency Load Shedding
Project 2007-05 — Balancing Authority Controls
Project 2007-11 — Disturbance Monitoring
Project 2008-04 — Protection Systems

NERC has identified a total of 51 proposed regional standards it expects to receive over the course of the timeframe contemplated by this work plan.

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Regional Projects Possibly Requiring Coordination with NERC Continent-wide Projects

In this section, four regional reliability standards development projects are described. These four regional projects are:

Project 2007-01-RE — Underfrequency Load Shedding
Project 2007-05-RE — Balancing Authority Controls
Project 2007-11-RE — Disturbance Monitoring
Project 2008-04-RE — Protection Systems

These projects are being coordinated with NERC's continent-wide standards projects as described in Volume II of this three-year development plan. In general, the standard drafting team of the NERC continent-wide project working with industry stakeholders shall propose which requirements should be continent-wide and which should be included in regional standards. Further, the timing of these regional projects is driven to large degree by the timeline of the corresponding continent-wide project.

Additional information is found in the individual projects that follow.

2007-01-RE — Underfrequency Load Shedding — Regional Standards Development

Standards Involved:

Eight regional reliability standards (one for each of the eight regions) identifying regional requirements in support of the following continent-wide standards:

- PRC-006 — Development and Documentation of Regional Reliability Organizations' Underfrequency Load Shedding Programs
- PRC-007 — Assuring Consistency with Regional UFLS Programs
- PRC-009 — UFLS Performance Following an Underfrequency Event

Research Needed:

None

Brief Description:

This is a continuation of the corresponding project in Volume II of this work plan. Depending on the findings and determinations of the NERC standard draft team for Project 2007-01 Underfrequency Load Shedding (NERC UFLS SDT), it is anticipated that each region may be required to develop a regional standard that supports the continent-wide standard(s) developed for underfrequency load shedding.

PRC-006 is one of the few reliability standards identified by the Regional Reliability Standards Working Group as a standard that has some requirements that may need to be defined by each regional entity in a regional standard.

The NERC UFLS SDT will work with stakeholders to review PRC-006 and each of the current regional programs developed in accordance with that standard, including any other associated programs and/or requirements related to and contained with the UFLS program documentation. The NERC UFLS SDT working with industry stakeholders shall propose which requirements should be continent-wide requirements and which requirements should be included in regional standards.

PRC-007 and PRC-009 have some 'fill-in-the-blank' characteristics, as identified in the Regional Reliability Standards Working Group work plan, which need to be removed. These standards shall be included with PRC-006 for consideration as one or more revised standards as necessary for consistency and clarity of overall program requirements and any other associated programs and/or requirements that affect or impact the UFLS program.

Standard Development Status:

See NERC Project 2007-01 UFLS

Milestone Timeline:

See NERC UFLS SDT schedule

Related Links:

NERC Regional Reliability Standards Under Development
Florida Reliability Coordinating Council (FRCC)
Midwest Reliability Organization (MRO)
Northeast Power Coordinating Council (NPCC)
ReliabilityFirst Corporation (RFC)
SERC Reliability Corporation (SERC)
Southwest Power Pool, Inc. (SPP)
Texas Regional Entity (TRE)
Western Electricity Coordinating Council (WECC)

2007-05-RE — Balancing Authority Controls — Regional Standards Development

Standards Involved:

Eight regional reliability standards (one for each of the eight regions) identifying regional requirements in support of the following continent-wide standard:

- BAL-002 — Disturbance Control Performance

Research Needed:

None

Brief Description:

This is a continuation of the corresponding project in Volume II of this work plan. Depending on the findings and determinations of the NERC standard draft team for Project 2007-05 Balancing Authority Controls (NERC BAC SDT), it is anticipated that each region may be required to develop a regional standard that supports the continent-wide standard(s) developed for disturbance control performance.

BAL-002 is one of the few reliability standards identified by the Regional Reliability Standards Working Group (RRSWG) as a standard that has some requirements that may need to be defined by each regional entity in a regional standard. In particular, its October 2006 report, the RRSWG suggested the following related to BAL-002:

- In the long-term, regional reliability standards should be developed in support of North American standard BAL-002.
- Each regional entity should create a regional standard specifying its Contingency Reserve policy.
- The continent-wide BAL-002 should be modified to:
  - address FERC's May 11 comments and
  - revise R2 to remove reference to "sub-Regional Reliability Organization or Reserve Sharing Group".

The NERC BAC SDT will work with stakeholders to review BAL-002 and each of the current regional programs developed in accordance with that standard, including any other associated programs and/or requirements related to and contained with the BAC program documentation. The NERC BAC SDT shall determine which requirements should be continent-wide requirements and which requirements should be included in regional standards.

Standards Development Status:

See NERC Project 2007-05 Balancing Authority Controls

Milestone Timeline:

See NERC BAC SDT schedule

Related Links:

NERC Regional Reliability Standards Under Development
Florida Reliability Coordinating Council (FRCC)
Midwest Reliability Organization (MRO)
Northeast Power Coordinating Council (NPCC)
ReliabilityFirst Corporation (RFC)
SERC Reliability Corporation (SERC)
Southwest Power Pool, Inc. (SPP)
Texas Regional Entity (TRE)
Western Electricity Coordinating Council (WECC)

2007-11-RE — Disturbance Monitoring — Regional Standards Development

Standards Involved:

Eight regional reliability standards (one for each of the eight regions) identifying regional requirements in support of the following continent-wide standard:

- PRC-002 — Define and Document Disturbance Monitoring Equipment Requirements

Research Needed:

None

Brief Description:

This is a continuation of the corresponding project in Volume II of this work plan. Depending on the findings and determinations of the NERC standard draft team for Project 2007-11 Disturbance Monitoring (NERC DM SDT), it is anticipated that each region may be required to develop a regional standard that supports the continent-wide standard(s) developed for disturbance monitoring.

PRC-002 is one of the few reliability standards identified by the Regional Reliability Standards Working Group (RRSWG) as a standard that has some requirements that may need to be defined by each regional entity in a regional standard. In particular, in its October 2006 report the RRSWG suggested the following related to PRC-002:

- In the long-term, this should be a Regional Reliability Standard.
- As written, it is a requirement for each RRO to develop a comprehensive set of requirements for DME and can be enforced that way.
- PRC-002 is directly related to PRC-018. PRC-018 requires the functional entities to comply with the requirements developed by each RRO. Any references to each other embedded in the requirements of the two standards need verified.
- Need regions to develop and submit regional standards.

The NERC DM SDT will work with stakeholders to review PRC-002 and each of the current regional programs developed in accordance with that standard, including any other associated programs and/or requirements related to and contained with the DM program documentation. The NERC DM SDT working with industry stakeholders shall propose which requirements should be continent-wide requirements and which requirements should be included in regional standards.

Standards Development Status:

See NERC Project 2007-11 Disturbance Monitoring.

Milestone Timeline:

See NERC DM SDT schedule.

Related Links:

NERC Regional Reliability Standards Under Development
Florida Reliability Coordinating Council (FRCC)
Midwest Reliability Organization (MRO)
Northeast Power Coordinating Council (NPCC)
ReliabilityFirst Corporation (RFC)
SERC Reliability Corporation (SERC)
Southwest Power Pool, Inc. (SPP)
Texas Regional Entity (TRE)
Western Electricity Coordinating Council (WECC)

2008-04-RE — Protection Systems — Regional Standards Development

Standards Involved:

Eight regional reliability standards (one for each of the eight regions) identifying regional requirements in support of the following continent-wide standard:

- PRC-012 — Special Protection System Review Procedure

Research Needed:

None

Brief Description:

This is a continuation of the corresponding project in Volume II of this work plan. Depending on the findings and determinations of the NERC standard draft team for Project 2008-04 Protection Systems (NERC PS SDT), it is anticipated that each region may be required to develop a regional standard that supports the continent-wide standard(s) developed for special protection systems/schemes.

PRC-012 is one of the few reliability standards identified by the Regional Reliability Standards Working Group (RRSWG) as a standard that has some requirements that may need to be defined by each regional entity in a regional standard.

The NERC PS SDT will work with stakeholders to review PRC-012 and each of the current regional programs developed in accordance with that standard, including any other associated programs and/or requirements related to and contained with the special protection system program documentation. The NERC PS SDT working with industry stakeholders shall propose which requirements should be continent-wide requirements and which requirements should be included in regional standards.

Standards Development Status:

This project has not yet started.

Milestone Timeline:

The timeline for this project has not yet been established.

Related Links:

NERC Regional Reliability Standards Under Development
Florida Reliability Coordinating Council (FRCC)
Midwest Reliability Organization (MRO)
Northeast Power Coordinating Council (NPCC)
ReliabilityFirst Corporation (RFC)
SERC Reliability Corporation (SERC)
Southwest Power Pool, Inc. (SPP)
Texas Regional Entity (TRE)
Western Electricity Coordinating Council (WECC)

Florida Reliability Coordinating Council (FRCC) Regional Reliability Standards Development Projects

PRC-002-FRCC-01 — Definition of FRCC Regional Disturbance Monitoring and Reporting Requirements — FRCC

Standards Involved:

PRC-002-FRCC-01 — Definition of FRCC Regional Disturbance Monitoring and Reporting Requirements — FRCC

Research Needed:

None

Brief Description:

FRCC plans to convert the existing handbook document, "FRCC Requirements for Disturbance Monitoring Equipment", revision dated June, 2006 into a new regional reliability standard, that complies with the requirements of NERC Reliability Standard, PRC-002-1 — "Define Regional Disturbance Monitoring and Reporting Requirements".

Standards Development Status:

See FRCC Definition of FRCC Regional Disturbance Monitoring and Reporting Requirements

Related Links:

See Florida Reliability Coordinating Council (FRCC) Standards Under Development page.

PRC-003-FRCC-01 — Misoperation of Protection Systems — FRCC

Standards Involved:

PRC-003 — FRCC-01 — Analysis of Misoperations of Transmission and Generation Protection Systems — FRCC

Research Needed:

None

Brief Description:

FRCC plans to convert the existing handbook document, "FRCC Requirements for Analysis of Protection Mis-operations & Corrective Actions Reporting", revision dated October 2003 into a new regional reliability standard, that complies with the requirements of NERC Reliability Standard, PRC-003-1 — "Regional Procedure for Analysis of Mis-operations of Transmission and Generation Protection Systems".

Standards Development Status:

See FRCC Regional Procedure for Analysis of Mis-operations of Transmission and Generation Protection Systems.

Related Links:

See Florida Reliability Coordinating Council (FRCC) Standards Under Development page.

PRC-006-FRCC-01 — FRCC Automatic Underfrequency Load Shedding Program

Standards Involved:

PRC-006-FRCC-01 — FRCC Automatic Underfrequency Load Shedding Program

Research Needed:

None

Brief Description:

FRCC plans to develop a regional standard to provide last resort system preservation measures by implementing an Underfrequency Load Shedding (UFLS) program.

In accordance with NERC Reliability Standard, PRC-006-0, "Development and Documentation of Regional Reliability Organizations' Underfrequency Load Shedding Programs", the FRCC plans to develop, coordinate, and document an UFLS program. These procedures are to be provided to the Load Serving Entities within the Region that are affected by the procedures.

Standards Development Status:

See FRCC Automatic Underfrequency Load Shedding Program

Related Links:

See Florida Reliability Coordinating Council (FRCC) Standards Under Development page.

PRC-024-FRCC-01 — Gen Performance During Frequency and Voltage Excursions — FRCC

Standards Involved:

PRC-024 — FRCC-01 — Generator Performance during Frequency and Voltage Excursions — FRCC

Research Needed:

None

Brief Description:

FRCC is developing a standard to establish “ride through” requirements for generators in the FRCC Region with respect to temporary grid voltage or frequency deviations from their normal range.

Standards Development Status:

See FRCC Regional Generator Performance During Frequency and Voltage Excursions.

Related Links:

See Florida Reliability Coordinating Council (FRCC) Standards Under Development page.

Midwest Reliability Organization (MRO) Regional Reliability Standards Development Projects

TPL-503-MRO-01 — System Performance Requirement — MRO

Standards Involved:

TPL-503-MRO-01 — System Performance Requirement — MRO

Research Needed:

None

Brief Description:

The MRO is developing a regional standard to ensure adequate interconnected transmission system performance in the MRO.

Standards Development Status:

See MRO System Performance Requirement.

Related Links:

See Midwest Reliability Organization (MRO) Standards Under Development page.

TPL-504-MRO-01 — Sub synchronous Resonance Requirement — MRO

Standards Involved:

TPL-504-MRO-01 — Subsynchronous Resonance Requirement — MRO

Research Needed:

None

Brief Description:

The MRO is developing a regional standard to ensure subsynchronous resonance with series compensated lines, torsional interaction with power system controls and generator shaft damage or excessive torsional fatigue due to network switching does not occur in the Midwest Reliability Organization ("MRO").

Standards Development Status:

See MRO Subsynchronous Resonance Requirement.

Related Links:

See Midwest Reliability Organization (MRO) Standards Under Development page.

PRC-502-MRO-01 — Power System Stabilizer Requirement — MRO

Standards Involved:

PRC-502-MRO-01 — Power System Stabilizer Requirement — MRO

Research Needed:

None

Brief Description:

The MRO is developing a regional standard to ensure that power system stabilizers are designed, installed and tuned as required to dampen power system oscillations in the Midwest Reliability Organization ("MRO"). To ensure small signal stability assessments are performed. To ensure testing programs are developed and poorly damped oscillations are analyzed and corrected.

Standards Development Status:

See MRO Power System Stabilizer Requirement.

Related Links:

See Midwest Reliability Organization (MRO) Standards Under Development page.

RES-501-MRO-01 — Generation Planning Reserve Requirements — MRO

Standards Involved:

RES-501-MRO-01 — Generation Planning Reserve Requirements — MRO

Research Needed:

None

Brief Description:

The MRO is developing a regional standard to establish common criteria by which to assess Resource Adequacy in the MRO for the short term and long term planning horizon.

Standards Development Status:

See MRO Generation Planning Reserve Requirements.

Related Links:

See Midwest Reliability Organization (MRO) Standards Under Development page.

PRC-006-MRO-01 — Development and Documentation of Regional UFLS Programs — MRO

Standards Involved:

PRC-006-MRO-01 — Development and Documentation of Regional UFLS Programs — MRO

Research Needed:

None

Brief Description:

The MRO will develop a regional reliability standard (Standard) with requirements for automatic Underfrequency Load Shedding (UFLS) programs. The regional Standards will require that UFLS programs arrest declining frequency and assist recovery of frequency following a frequency excursion. This standard will address the UFLS Regional Reliability Standard Characteristics developed by the NERC UFLS standard draft team.

Standards Development Status:

See MRO Development and Documentation of Regional UFLS Programs.

Related Links:

See Midwest Reliability Organization (MRO) Standards Under Development page.

BAL-002-MRO-01 — Disturbance Control Performance — MRO

Standards Involved:

BAL-002-MRO-01 — Disturbance Control Performance — MRO

Research Needed:

None

Brief Description:

The MRO will update the current regional standard that supports the continent-wide standard(s) developed for disturbance control performance. The regional Standards will specify regional Contingency Reserve policy.

Standards Development Status:

See MRO Disturbance Control Performance.

Related Links:

See Midwest Reliability Organization (MRO) Standards Under Development page.

PRC-012-MRO-01 — Special Protection System Review Procedure — MRO

Standards Involved:

PRC-012-MRO-01 — Special Protection System Review Procedure — MRO

Research Needed:

None

Brief Description:

The MRO will develop the requirements for the design, performance, coordination, maintenance and testing of Special Protection Systems; to ensure misoperations are properly analyzed and corrected. The MRO will develop the technical criteria required to support its implementation.

Standards Development Status:

See MRO Special Protection System Review Procedure.

Related Links:

See Midwest Reliability Organization (MRO) Standards Under Development page.

PRC-018-MRO-01 — Disturbance Monitoring — MRO

Standards Involved:

PRC-018-MRO-01 — Disturbance Monitoring — MRO

Research Needed:

None

Brief Description:

The MRO will develop requirements for recording and reporting sequence of events (SOE) data, fault recording (FR) data, and dynamic disturbance recording (DDR) data to facilitate analysis of Disturbances including:

• how to determine / select a preferred location of this equipment,
• installation and equipment minimum technical requirements,
• data communication requirements,

Standards Development Status:

See MRO Disturbance Monitoring.

Related Links:

See Midwest Reliability Organization (MRO) Standards Under Development page.

Northeast Power Coordinating Council (NPCC) Regional Reliability Standards Development Projects

NPCC will be developing at least one regional standard beyond the four regional standards projects required to support their associated continent-wide NERC reliability standards identified in the first part of this volume. NPCC will develop the initial five regional standards in conjunction with, and as set forth by the schedules associated with, the continent-wide standards, schedules set forth by FERC and our members.

BES-501-NPCC-01 — Classification of Bulk Power Systems Elements — NPCC

Standards Involved:

BES-501-NPCC-01 — Classification of Bulk Power System Elements — NPCC

Research Needed:

None

Brief Description:

NPCC has begun the development of a standard that outlines the methodology of how the BPS in the NPCC region is determined through analytical studies. The Standard will be based on the NPCC A-10 Classification of Bulk Power System Elements, criteria.

Standards Development Status:

The NPCC Regional Standards Committee has approved the Regional Standards Authorization Request, RSAR, drafting will begin shortly and in accordance with NPCC's, FERC filed and approved Regional Standards Development Procedure.

Related Links:

See Northeast Power Coordinating Council's NPCC "Standards Under Development" page.

PRC-006-NPCC-01 — Underfrequency Load Shedding Program — NPCC

Standards Involved:

PRC-006-NPCC-01 — Underfrequency Load Shedding Program — NPCC

Research Needed:

None

Brief Description:

This Standard will provide the measures to automatically provide system preservation by implementing an automatic underfrequency load shedding program to respond to system underfrequency events. The Standard will also emphasize the need for coordination amongst the NPCC region's members, and those areas outside the NPCC footprint, and provide direction for refinements of underfrequency systems already in place.

The Standard will ensure that all requirements will be identified to ensure compliance with relevant NERC standards.

The NPCC regional UFLS standard shall apply to Control Areas that are both synchronous and asynchronous to the eastern interconnection. Control areas that are asynchronous (e.g. Quebec) may develop UFLS parameters with a different technical basis if required.

Standards Development Status:

The NPCC Regional Standards Committee has approved the Regional Standards Authorization Request, RSAR, drafting will begin shortly and in accordance with NPCC's, FERC filed and approved Regional Standards Development Procedure.

Related Links:

See Northeast Power Coordinating Council's NPCC "Standards Under Development" page.

PRC-012-NPCC-01 — Special Protection Systems — NPCC

Standards Involved:

PRC-012-NPCC-01 — Special Protection Systems — NPCC

Research Needed:

None

Brief Description:

The proposed Standard will describe the requirements for the design of Special Protection Systems, and the technical criteria required to support its implementation. The Standard will also identify the need for close coordination among various parties to ensure that the Special Protection Systems are implemented correctly, and triggers and resulting actions are made known and communicated in an on-line database.

Standards Development Status:

The NPCC Regional Standards Committee has approved the Regional Standards Authorization Request, RSAR, drafting will begin shortly and in accordance with NPCC's, FERC filed and approved Regional Standards Development Procedure.

Related Links:

See Northeast Power Coordinating Council's NPCC "Standards Under Development" page.

PRC-002-NPCC-01 — Disturbance Monitoring — NPCC

Standards Involved:

PRC-002-NPCC-01 — Disturbance Monitoring— NPCC

Research Needed:

None

Brief Description:

The Standard will establish the technical requirements for disturbance monitoring equipment, including:

- system operating parameters that are to be measured and recorded,
- how to determine / select a preferred location of this equipment,
- installation and equipment minimum technical requirements,
- data communication requirements,
- analysis tools.

Criteria for facility owner requirements for reporting disturbance data will also be defined.

Standards Development Status:

The NPCC Regional Standards Committee has approved the Regional Standards Authorization Request, RSAR, drafting will begin shortly and in accordance with NPCC's, FERC filed and approved Regional Standards Development Procedure.

Related Links:

See Northeast Power Coordinating Council's NPCC "Standards Under Development" page.

ReliabilityFirst Corporation (RFC) Regional Reliability Standards Development Projects

MOD-024-RFC-01 — Generator Real (MW) Power Capability — RFC

Standards Involved:

MOD-024-RFC-01 — Verification of Generator Real (MW) Power Capability — RFC

Research Needed:

None

Brief Description:

RFC plans to develop a regional standard to ensure accurate information on generator gross and net Real (MWs) Power capability is available for steady-state models used to assess Bulk Electric System reliability.

Standards Development Status:

See RFC Verification and Data Reporting of Generator Gross and Net Real Power Capability project.

Related Links:

See ReliabilityFirst Corporation (RFC) Standards Under Development page.

MOD-025-RFC-01 — Generator Reactive (MVAR) Power Capability — RFC

Standards Involved:

MOD-025-RFC-01 — Verification of Generator Reactive (MVAr) Power Capability — RFC

Research Needed:

None

Brief Description:

RFC plans to develop a regional standard to ensure accurate information on generator gross and net Reactive (MVAR) Power capability is available for steady-state models used to assess Bulk Electric System reliability.

Standards Development Status:

See RFC Verification and Data Reporting of Generator Gross and Net Reactive Power Capability project

Related Links:

See ReliabilityFirst Corporation (RFC) Standards Under Development page.

BAL-502-RFC-02 — Resource Planning Reserve Requirement Standard — RFC

Standards Involved:

BAL-502-RFC-02 — Resource Planning Reserve Requirement Standard — RFC

Research Needed:

None

Brief Description:

RFC is developing a regional standard to establish requirements for a minimum level of resource adequacy to reliably serve all load in the ReliabilityFirst (RFC) corporate region.

Standards Development Status:

See RFC Planning Resource Adequacy Analysis, Assessment and Documentation.

Related Links:

See ReliabilityFirst Corporation (RFC) Standards Under Development page.

PRC-006-RFC-01 — Automatic Underfrequency Load Shedding Requirements — RFC

Standards Involved:

PRC-006-RFC-01 — Automatic Underfrequency Load Shedding Requirements — RFC

Research Needed:

None

Brief Description:

RFC is developing a regional standard to establish requirements for automatic underfrequency load shedding (UFLS) to support NERC Reliability Standard PRC-006.

Standards Development Status:

See RFC Automatic Underfrequency Load Shedding Requirements.

Related Links:

See ReliabilityFirst Corporation (RFC) Standards Under Development page

PRC-002-RFC-01 — Disturbance Monitoring and Reporting Requirements — RFC

Standards Involved:

PRC-002-RFC-01 — Disturbance Monitoring and Reporting Requirements — RFC

Research Needed:

None

Brief Description:

RFC is developing a regional standard to establish requirements establish requirements for Disturbance monitoring and reporting to support NERC Reliability Standard PRC-002.

Standards Development Status:

See RFC Disturbance Monitoring and Reporting Requirements

Related Links:

See ReliabilityFirst Corporation (RFC) Standards Under Development page

PRC-012-RFC-01 — Special Protection System Requirements — RFC

Standards Involved:

PRC-012-RFC-01 — Special Protection System Requirements — RFC

Research Needed:

None

Brief Description:

RFC is developing a regional standard to establish requirements for the review, development and application of Special Protection Systems (SPS) in one RFC standard allowing the retirement of the associated legacy documents. The standard will ultimately be mandated by NERC in support of NERC PRC-012-1 as related to a review process as well as a unique RFC application criterion.

Standards Development Status:

See RFC Special Protection System Requirements Standard.

Related Links:

See ReliabilityFirst Corporation (RFC) Standards Under Development page

SERC Reliability Corporation (SERC) Regional Reliability Standards Development Projects

SERC has no additional regional standards planned at this time beyond the four regional standards projects required to support their associated continent-wide NERC reliability standards identified in first part of this volume. SERC will develop these four regional standards in conjunction with, and as set forth by the schedules associated with, the continent-wide standards.

PRC-006-SERC-01 — Underfrequency Load Shedding Program — SERC

Standards Involved:

PRC-006-SERC-01 — Underfrequency Load Shedding Program — SERC

Research Needed:

None

Brief Description:

This Standard will provide the measures to automatically provide system preservation by implementing an automatic underfrequency load shedding (UFLS) program to respond to system underfrequency events. The Standard will also emphasize the need for coordination amongst the entities within the SERC footprint, and with those areas outside the SERC footprint. The Standard will ensure that all requirements will be identified to ensure compliance with relevant NERC standards.

Standards Development Status:

The SERC Standards Committee accepted the SAR to develop a SERC UFLS Regional Reliability Standard on February 27, 2008 and assigned to the SERC Engineering Committee (EC). It was approved by the EC Executive Committee on April 25, 2008 and a standard draft team (or Responsible SERC Subgroup—RSS) was appointed on June 19, 2008. Currently in Step 6 (*Drafting of a SERC Regional Reliability Standard*) of the 13 steps SERC Regional Standards Development Procedure.

Related Links:

See the SERC Reliability Corporation Standards page

Southwest Power Pool, Inc. (SPP) Regional Reliability Standards Development Projects

PRC-300-SPP-01 — Automatic Underfrequency Load Shedding Program — SPP

Standards Involved:

PRC-300-SPP-01 — Automatic Underfrequency Load Shedding Program — SPP

Research Needed:

None

Brief Description:

The SPP Standard Drafting Team is in a process developing first draft of SPP regional standard for Underfrequency Load Shedding Program. The regional Standards will require that UFLS programs arrest declining frequency and assist recovery of frequency following a frequency excursion. This standard will consider the UFLS Regional Reliability Standard Characteristics developed by the NERC UFLS standard draft team.

Standards Development Status:

See SPP Standard Development Page

Related Links:

See Southwest Power Pool's (SPP) Standards Under Development page

Texas Regional Entity (TRE) Regional Reliability Standards Development Projects

BAL-001-TRE-01 — Regional Variance for CPS2 — Texas RE

Standards Involved:

BAL-001 — TRE-01 Regional Variance for CPS2 — TRE

Research Needed:

None

Brief Description:

A TRE standard drafting team is drafting a regional variance to R2 of BAL-001-0 that still meets the purpose of the standard: Maintain Interconnection steady-state frequency within defined limits by balancing real power demand and supply in real-time. ERCOT currently has a NERC waiver for the CPS2 method (11/21/02) described in R2. This regional variance will provide what ERCOT employs instead of CPS2 to achieve the overall purpose of the BAL standard.

This variance will be the modification that was ordered by FERC in Order 693: As with other new regional differences, the commission expects that the ERCOT regional difference will include Requirements, Measures, and Levels of Non-Compliance sections. This regional variance will incorporate Section 5.9 of the ERCOT Protocols (and the applicable Nodal Protocol) to accomplish this objective. This variance will apply only to the Balancing Authority that is ERCOT.

Standards Development Status:

See Texas Regional Entity (TRE) Reliability Standards Tracking Status

Related Links:

SAR-003 Standard Drafting Team: Modification to ERCOT Waiver to R2 of BAL-001-0 CPS2

PRC-006-TRE-01 — Development and Documentation of Regional UFLS Program — Texas RE

Standards Involved:

PRC-006-TRE-01 — Development and Documentation of Regional UFLS Program — TRE

Research Needed:

None

Brief Description:

A TRE standard drafting team will develop a regional reliability standard with requirements for automatic UFLS programs that will require that UFLS programs arrest declining frequency and assist recovery of frequency following a frequency excursion. The standard will incorporate NERC UFLS standard characteristics that are under development. The team is currently following, reviewing, and commenting upon those characteristics.

Standards Development Status:

See Texas Regional Entity (TRE) Reliability Standards Tracking Status

Related Links:

SAR-002 Standard Drafting Team: Development and Documentation of Regional UFLS Programs

Western Electricity Coordinating Council (WECC) Regional Reliability Standards Development Projects

(Note: WECC is currently undergoing an extensive study of what regional standards need to be developed. The study should be completed by the end of 2007 at which time WECC may add to the list of WECC regional reliability standards to be developed.)

TOP-007-WECC-1 — Operating Transfer Capability — WECC

Standards Involved:

TOP-007-WECC-1 — Operating Transfer Capability — WECC

Research Needed:

None

Brief Description:

The purpose of this standard is to create a permanent replacement standard for TOP-STD-007-0. TOP-007-WECC-1 is designed to implement the directives of FERC and recommendations of NERC when TOP-STD-007-0 was approved as a NERC reliability standard.

This draft standard incorporates the following refinements to the first draft of TOP-007-WECC-1 in response to comments received during the first comment period that ended November 5, 2007 and the second comment period that ended January 2, 2008.

1. Refine R1 to remove the requirement to return a path to within its limit in 20 minute for SOLs based upon Transient Stability and Voltage Stability.
2. Refine R2 to limit the compliance period for the Net Scheduled Interchange to the real-time schedules for the next hour.
3. Refine R2 to permit 30 minutes to adjust Net Scheduled Interchange when SOLs reduce within 20 minutes of the start of the hour.
4. Change M2 based upon the refinements to R2.
5. Base the violation severity levels for R2 upon magnitude.

This version of the TOP-007-WECC-1 standard is for NERC Board of Trustee ballot. The WECC Board of Directors approved the standard April 16, 2008. WECC Operating Committee approved the standard March 6, 2008. The WECC Board of Directors and Operating Committee request that the NERC Board of Trustees approve the TOP-007-WECC-1 Standard as a permanent replacement standard for TOP-STD-007-0 and that the NERC Board of Trustees submits the standard to FERC for approval and replacement of TOP-STD-007-0.

Justification for a Regional Standard

The NERC standard (TOP-STD-007-0) has requirements for reducing actual flows to within System Operating Limits (SOL) on Major WECC Transfer Paths in the Bulk Electric System. The major paths listed in the Table titled “Major WECC Transfer Paths in the Bulk Electric System” are significant components for reliable delivery of power in the Western Interconnection. System Operating Limits for these paths are critical because they transfer energy from remotely located generation to population/load centers. The entities of the Western Interconnection through studies and operation see the need for optimizing the capacity of these paths. The lack of redundant transmission in these corridors raises the level of scrutiny for these paths; therefore, this standard is designed to add emphasis to reducing flows to within SOL to maintain reliable Western Interconnection operation.

NERC TOP-007-0 (R2) requires the Transmission Operator to return its transmission path flows to within Interconnection Reliability Operating Limits (IROL) as soon as possible, but no longer than 30 minutes following a contingency or event. This requirement applies only to those limits that are defined as IROL. Depending on the current system conditions, the limits for the paths identified in this TOP-007-WECC-1 standard are SOL that would not result in cascading outages. There is no NERC requirement to return the transmission system to within SOL limits, only a requirement to report to the Reliability Coordinator. TOP-007-WECC-1 specifically applies to the major paths in the Western Interconnection regardless of whether the limit is defined as an IROL or the less severe SOL.

In Order No. 693 and Docket No. RR07-11-000, the FERC expressed concern that TOP-007-0 could be interpreted as allowing a system operator to respect IROLs in one of two ways: (1) allowing IROL to be exceeded during normal operations, *i.e.*, prior to a contingency, provided that corrective actions are taken within 30 minutes; or (2) allowing IROL to be exceeded only after a contingency and subsequently returning the system to a secure condition as soon as possible, but no longer than 30 minutes. FERC explained that the system could be one contingency away from potential cascading failure if operated under the first interpretation and two contingencies away from cascading failure under the second interpretation. FERC directed NERC to conduct a survey on IROL practices and actual operating experiences of managing within IROL. The survey results will provide guidance on the frequency, duration, and magnitude of IROL violations and whether these IROL violations occur during normal or contingency conditions.

WECC and NERC responded to FERC's June 8, 2007 Order (Docket No. RR007-11-000) in its compliance filing of July 9, 2007. The compliance filing document is posted with this standard for reference. On November 2, 2007, FERC accepted NERC's and WECC's filing and indicated that the filling satisfactorily responds to the Commission's directive, *Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications*, 119 FERC ¶ 61,260 (2007) at P 108.

Standards Development Status:

See WECC Development Status page

Related Links:

See WECC Approved Standards page

PRC-STD-001-1 — Certification of Protective Relay — WECC

Standards Involved:

PRC-STD-001-1 — Certification of Protective Relay — WECC

Research Needed:

None

Brief Description:

The PRC-STD-001 standard will be retired.

Standards Development Status:

Related Links:

PRC-004-WECC-1 — Protective Relay and RAS Misoperation — WECC

Standards Involved:

PRC-004-WECC-1 — Protective Relay and RAS Misoperation — WECC

Research Needed:

None

Brief Description:

The purpose of this standard is to create a permanent replacement standard for PRC-STD-001-1 and PRC-STD-003-1. PRC-004-WECC-1 is designed to implement the directives of FERC and recommendations of NERC when PRC-STD-001-1 and PRC-STD-003-1 were approved as NERC reliability standards. The new standard addresses the following areas:

1. Requirements for investigating operations to check for Misoperations.
2. Mitigation requirements after security-based Misoperations for redundant or non-redundant Protection Systems or Remedial Action Schemes.
3. Mitigation requirements after dependability-based Misoperations that do not adversely affect the reliability of the Bulk Electric System.

Several significant changes were made to PRC-STD-001 and PRC-STD-003 and they are itemized here:

1. PRC-STD-003 was renumbered to PRC-004-WECC-1. This makes both the PRC-004 and the Regional PRC-004-WECC-1 standards applicable to similar entities. PRC-003 is applicable to the RRO.
2. Standard PRC-STD-001 will be retracted because the requirements are covered by other standards per description below:
    a. PRC-STD-001 requirements B-WR1-a,b,c are covered under PRC-001
    b. PRC-STD-001 requirement B-WR1-d is covered in this standard PRC-004-WECC-1
    c. PRC-STD-001 requirement B-WR1-e is covered under TOP-005-1

The WECC Operating Committee approved the PRC-004-WECC-1 standard as a permanent replacement standard for PRC-STD-001-1 and PRC-STD-003-1 on March 6, 2008. The WECC Board of Directors approved this standard April 16, 2008. The WECC Board of Directors recommends that the NERC Board of Trustees approve the PRC-004-WECC-1 as a permanent replacement standard for PRC-STD-001-1 and PRC-STD-003-1. In addition, the WECC Board of Directors recommends that the NERC Board of Trustees submits the standard to FERC for approval.

Justification for a Regional Standard

The NERC standard PRC-003-1 has requirements for Regional Reliability Organizations to establish procedures for review, analysis, reporting, and mitigation of transmission and generation Protection System Misoperations but does not address the owners of the transmission

and generation facilities. The NERC standard PRC-004-1 has requirements for Protection System Misoperations but does not provide for the additional requirements as listed in PRC-004-WECC-1. The WECC Transmission Paths listed in the table titled "Major WECC Transfer Paths in the Bulk Electric System" and WECC RAS listed in table titled "Major WECC Remedial Action Schemes (RAS)" of PRC-004-WECC-1 are significant components for reliable delivery of power in the Western Interconnection. Protection System Misoperations and failures can cause reductions to the System Operating Limits (SOL) for those paths, and thus limit transfers between remotely located generation in the Western Interconnection and population/load centers. WECC identified the need for the timely mitigation of relaying problems and implemented such actions under the Reliability Management System (RMS). PRC-004-WECC-1 incorporates the RMS criteria and provides:

1. More robust requirements for review and analysis of all operations of those elements by operating and system protection personnel, and
2. Timely actions that must be taken to ensure that Misoperations of those elements are not repeated.

This standard is designed to minimize the SOL reductions required to maintain reliable Western Interconnection operation.

Standards Development Status:

See WECC Standards Development page

Related Links:

See WECC Approved Standards page

IRO-006-WECC-1 — Unscheduled Flow — WECC

Standards Involved:

IRO-006-WECC-1 — Unscheduled Flow — WECC

Research Needed:

None

Brief Description:

The WECC Regional Standards Task Force (RSTF) has identified the Qualified Path Unscheduled Flow (USF) Relief Criterion included in Reliability Management System (RMS) Reliability Criteria Agreement as a criterion that the RSTF desires to translate to the newly approved WECC Standards format for submittal to the ERO for approval for mandatory compliance. All requirements and compliance elements associated with the Qualified Path Unscheduled Flow Relief requirements are already identified in the existing RMS Agreement, so development of these components is not necessary. This is a translation effort to put the requirements in the approved format and seek WECC approval for submittal to the ERO for mandatory enforcement.

The purpose of this standard is to create a permanent replacement standard for IRO-STD-006-0 that implements key requirements from WECC's Unscheduled Flow Mitigation Plan (UFMP). The standard called IRO-006-WECC-1 is designed to implement the FERC directives and NERC recommendations when IRO-STD-006-0 was approved as a NERC reliability standard. In the UFMP the Qualified Path Unscheduled Flow Relief responsibilities do not conform to the current NERC functional model. This RMS Criterion and currently-approved standard assigns Load Serving Entities (LSEs) the responsibility of curtailing schedules to reduce unscheduled flow, a reliability function that the NERC functional model now assigns to Reliability Coordinators and Balancing Authorities. The existing RMS and IRO-STD-006 standards place the sole responsibility for providing relief upon the LSE without providing the ability for the LSE to ensure compliance (e.g. the Balancing Authority does not have to approve a curtailment request made by the LSE).

In the proposed IRO-006-WECC-1 standard, responsibility for initiating schedule curtailment is assigned to the Reliability Coordinators, and the responsibility for implementing the curtailments is assigned to Balancing Authorities. The proposed standard should improve the efficiency of the program including improved compliance, more certain Unscheduled Flow relief, and fewer complications associated with multiple entities taking partial responsibility for curtailment activity.

Standards Development Status:

See WECC Standards Development page

Related Links:

See WECC Approved Standards page

FAC-501-WECC-1 — Transmission Maintenance — WECC

Standards Involved:

FAC-501-WECC-1 — Transmission Maintenance — WECC

Research Needed:

None

Brief Description:

The purpose of this standard is to create a permanent replacement standard for PRC-STD-005-1. In response to comments, the drafting team changed the name of the standard from PRC-005-WECC-1 to FAC-501-WECC-1 to better align with the NERC numbering system. FAC-501-WECC-1 is designed to implement the directives of FERC and recommendations of NERC when PRC-STD-005-1 was approved as a NERC reliability standard. This version of the FAC-501-WECC-1standard is for NERC Board of Trustee ballot. The WECC Board of Directors approved the standard April 16, 2008. WECC Operating Committee approved the standard March 6, 2008. The WECC Board of Directors and Operating Committee request that the NERC Board of Trustees approve the FAC-501-WECC-1 Standard as a permanent replacement standard for PRC-STD-005-1 and that the NERC Board of Trustees submits the standard to FERC for approval and replacement of PRC-STD-005-1.

Standards Development Status:

See WECC Standards Development page

Related Links:

See WECC Approved Standards page

VAR-002-WECC-1 — Automatic Voltage Regulators — WECC

Standards Involved:

VAR-002-WECC-1 — Automatic Voltage Regulators — WECC

Research Needed:

None

Brief Description:

The purpose of this standard is to create a permanent replacement standard for VAR-STD-002a-1. VAR-002-WECC-1 is designed to implement the directives of FERC and recommendations of NERC when VAR-STD-002a-1 was approved as a NERC reliability standard.

In the Western Interconnection, System Operating Limits for transmission paths in the Bulk Electric System assume that Automatic Voltage Regulators are in service to control voltage to support the transfer capability. The requirements in VAR-002-WECC-1 are to ensure that the generator provides the proper voltage support when generation and transmission outages occur.

This version of the VAR-002-WECC-1 standard is for NERC Board of Trustee ballot. The WECC Board of Directors approved the standard April 16, 2008. WECC Operating Committee approved the standard March 6, 2008. The WECC Board of Directors and Operating Committee request that the NERC Board of Trustees approve the VAR-002-WECC-1 Standard as a permanent replacement standard for VAR-STD-002a-1 and that the NERC Board of Trustees submits the standard to FERC for approval and replacement of VAR-STD-002a-1.

VAR-002-WECC-1 is more stringent than a continent wide standard.

Standards Development Status:

See WECC Standards Development page

Related Links:

See WECC Approved Standards page

VAR-501-WECC-1 — Power System Stabilizers — WECC

Standards Involved:

VAR-501-WECC-1 — Power System Stabilizers — WECC

Research Needed:

None

Brief Description:

The WECC Regional Standards Task Force (RSTF) has identified the Power System Stabilizers (PSS) Criterion included in Reliability Management System (RMS) Reliability Criteria Agreement as a criterion that the RSTF desires to translate to the newly approved WECC Standards format for submittal to the ERO for approval for mandatory compliance. All requirements and compliance elements associated with the PSS requirements are already identified in the existing RMS Agreement, so development of these components is not necessary. This is a translation effort to put the requirements in the approved format and seek WECC approval for submittal to the ERO for mandatory enforcement.

The purpose of this standard is to create a permanent replacement standard for VAR-STD-002b-1. VAR-501-WECC-1 is designed to implement the directives of FERC and recommendations of NERC when VAR-STD-002b-1 was approved as a NERC reliability standard. NERC Standard VAR-002-1 only requires that Transmission operators know the status of Power System Stabilizers (PSS). WECC's proposed VAR-501-WECC-1 standard requires that PSS to be in service 98% of all operating hours for synchronous generators, unless very specific with restrictive repair and operational conditions exist. The permanent replacement standard VAR-STD-002b-1 addresses requirements for which there is no similar NERC Standard.

Standards Development Status:

Related Links:

See WECC Approved Standards page

BAL-004-WECC-01 — Automatic Time Error Correction Standard — WECC

Standards Involved:

BAL-004-WECC-01 — Automatic Time Error Correction Standard — WECC

Research Needed:

None

Brief Description:

WECC is developing a regional standard to maintain Interconnection frequency within a predefined frequency profile under all conditions (i.e. normal and abnormal), and to ensure that Time Error Corrections are effectively conducted in a manner that does not adversely affect the reliability of the Interconnection.

The Automatic Time Error Correction standard is designed to:

1. Ensure that Automatic Time Error Correction is an enforceable mandatory standard in the Western Interconnection
2. Ensure participation from all Balancing Authorities in the Western Interconnection
3. Ensure continuous and equitable payback of accumulated Inadvertent Interchange between Balancing Authorities in the Western Interconnection
4. Ensure continuous reduction in time error correction

Submitted to FERC for approval.

Standards Development Status:

Related Links:

See WECC Approved Standards page

BAL-002-WECC-1 — Contingency Reserves — WECC

Standards Involved:

BAL-002-WECC-01 Contingency Reserves Standard — WECC

Research Needed:

None

Brief Description:

The purpose of this standard is to create a permanent replacement standard for BAL-STD-002-0. BAL-002-WECC-1 is designed to implement the directives of FERC and recommendations of NERC when BAL-STD-002-0 was approved as a NERC reliability standard. The drafting team implemented in the standard additional refinements to address concerns as explained in the document titled, "WECC Standard BAL-002-WECC-1 Contingency Reserves." To assist in understanding the refinements made to the standard, the drafting team has developed a document that compares BAL-002-WECC-1, the permanent replacement standard, with the existing BAL-STD-002-0 (see BAL-002-WECC-1 Comparison).

This version of the BAL-002-WECC-1 standard is for NERC Board of Trustee ballot. The WECC Board of Directors approved the standard April 16, 2008. WECC Operating Committee approved the standard March 6, 2008. The WECC Board of Directors and Operating Committee request that the NERC Board of Trustees approve the BAL-002-WECC-1 Standard as a permanent replacement standard for BAL-STD-002-0 and that the NERC Board of Trustees submits the standard to FERC for approval and replacement of BAL-STD-002-0.

Standards Development Status:

See WECC Standards Development Status page:

Related Links:

See WECC Approved Standards page

EXHIBIT B

Stakeholder Comments

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Comments on Reliability Standards Development Plan 2009-2011

NERC welcomes suggestions and comments targeted at improving the reliability of the bulk power system through improved reliability standards. Please use this form to submit your suggestions and/or comments related to NERC's Reliability Standards or Reliability Standards Development Plan. NERC will consider all suggestions and comments received and will incorporate the ideas submitted into a future standards development project or a future revision of the Reliability Standards Develop Plan, as appropriate.

A link to the current version of the Reliability Standards Development Plan can be found on NERC's standards Web page.

Please return all completed forms via e-mail to sarcomm@nerc.net with the words "Standards Suggestions" in the subject line.

http://www.nerc.com/~filez/standards/Project_2008-06_Cyber_Security.html

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at gerry.adamski@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.[1]

[1] The appeals process is in the Reliability Standards Development Procedures: http://www.nerc.com/standards/newstandardsprocess.html.

Index to Questions, Comments, and Responses

Name	Organization	NERC Committee	NERC Program Area	Subcommittee, Working Group, or Task Force	Compliance audit, readiness review, or events analysis (if applicable — specify the entity and date of the audit, evaluation, or event)
Denise Koehn (1)	Bonneville Power Administration				
Jack Kerr	Dominon Virginia Power			Real-time Tools Best Practices Task Force	
Jenifur Rancourt (1)	BPA - Agency Compliance & Governance				
Rebecca Berdahl (1)	BPA - Power Long Term Sales & Services				
Barbara Rehman (1)	BPA - Transmission Policy Development & Analysis				
Louis Slade (2)	Dominion Resources Services				
Jalal Babik (2)	Dominion Resources Services				
Ronald Hart (2)	Dominion Resources Services				
Mark L Bennett	Gainesville Regional Utilities	None			
Terry Bilke	Midwest ISO	See attached Word document for comments.			
R. W. Kenyon, J.D., P.E.	NERC	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Suzanna Strangmeier (3)	NERC	Compliance and Certification Committtee	Compliance Monitoring and Enforcement	SIS	
John Blazekovich (3)	Exelon Corporation				
James D Burley (3)	Midwest Reliability Organization				
Leanne Harrison (3)	PJM Interconnection				
Robert E. Hoopes (3)	PPL Corp				
Jason L. Marshall (3)	Midwest ISO				

Name	Organization	NERC Committee	NERC Program Area	Subcommittee, Working Group, or Task Force	Compliance audit, readiness review, or events analysis (if applicable — specify the entity and date of the audit, evaluation, or event)
Guy Zito (4)	NPCC	None		NPCC, Regional Standards Committee	
Ed Thompson (4)	Consolidated Edison Co. of New York, Inc.				
David Kiguel (4)	Hydro One Networks Inc.				
Sylvain Clermont (4)	Hydro-Quebec TransEnergie				
Frederick White (4)	Northeast Utilities				
Roger Champagne (4)	Hydro-Quebec TransEnergie				
Ron Falsetti (4)	Independent Electricity System Operator				
Kathleen Goodman (4)	ISO - New England				
Randy MacDonald (4)	New Brunswick System Operator				
Gregory Campoli (4)	New York Independent System Operator				
Michael Ranalli (4)	National Grid				
Ronald E. Hart (4)	Dominion Resources, Inc.				
Ralph Rufrano (4)	New York Power Authority				
Brian L. Gooder (4)	Ontario Power Generation Incorporated				
Michael Gildea (4)	Constellation Energy				
Brian D. Evans-Mongeon (4)	Utility Services				
Donald E. Nelson (4)	Massachusetts Dept. of Public Utilities				

Name	Organization	NERC Committee	NERC Program Area	Subcommittee, Working Group, or Task Force	Compliance audit, readiness review, or events analysis (if applicable — specify the entity and date of the audit, evaluation, or event)
Brian Hogue (4)	NPCC				
Alan Adamson (4)	New York State Reliability Council				
Lee Pedowicz (4)	NPCC				
Gerry Dunbar (4)	NPCC				
Patricia Metro	National Rural Electric Cooperative Association (NRECA)				
Charlie Deleon	NRG				
Patrick Brown	PJM Interconnection				
David Schiada	Southern California Edison Company	Standards Committee		Communications and Planning Subcommittee	
Roman Carter (5)	Southern Company Transmission (SOCO)				
JT Wood (5)	Southern Company Transmission				
Jim Busbin (5)	Southern Company Transmission				
Marc Butts (5)	Southern Company Transmission				
Group (1) — Bonneville Power Administration Group (2) — Dominion Group (3) — Compliance Elements Development Resource Pool — Standards Interface Subcommittee Group (4) — NPCC Group (5) — Southern Company Transmission					

1. Does this suggestion or comment address an existing standard?

1. Name: Denise Koehn **Organization:** BPA
NERC Response:

1. Name: Jack Kerr **Organization:** Dominon Virginia Power
Yes No ☒ (If no, skip to the next question.)
NERC Response:

1. Name: Louis Slade **Organization:** Dominion Resources Services, Inc.
Yes No ☒ (If no, skip to the next question.)
NERC Response:

1. Name: Mark L Bennett **Organization:** Gainesville Regional Utilities
Yes No ☒ (If no, skip to the next question.)
NERC Response:

1. Name: R. W. Kenyon, J.D., P.E. **Organization:** NERC
Yes No ☒ (If no, skip to the next question.)
NERC Response:

1. Name: Suzanna Strangmeier, on behalf of the Standards Interface Subcommittee (SIS) **Organization:** NERC
Yes ☒ No (If no, skip to the next question.)
Standard Number(s): PER-004-2
Standard Title(s): Reliability Coordination--Staffing
Element(s) (i.e., Requirement R1.2., Measure M2., etc.): R1. and its VSLs, R2. and its VSLs
Suggestion or Comment: R1. Comments: This requirement (staffed by trained and certified operators 24/7) – this requirement is currently set up as a binary requirement. The issue with this requirement is that it is possible that an operator may be certified but has not met all of his/her training requirements for a given period of time (proposed PER-005 R3), or not have a training program in place that meets training program requirements (proposed PER-005 R1 - systematic approach). This CEDRP believes that this requirement is in need of further clarification from a compliance perspective to address the “trained” issue; in addition how is a violation is determined and counted? (E.g. is one hour without a certified operator that same as one shift? If a shift crosses a day’s boundary (1800 to 0600) is that a single violation or two violations of this requirement). The CEDRP believes as

currently written this requirement will be subject to multiple regional entity interpretations.

R2. Comments:

As currently written the CEDRP does not believe that this requirement is measurable, an objective VSL cannot be written.

Example:

Recommendation for improvement: R1. VSL Comments

CEDRP Proposed Lower VSL:The position has been staffed with a NERC Certified operator with 29 hours and less than 32 hours of emergency operation training over the last 12 months.

CEDRP Proposed Moderate VSL: The position has been staffed with a NERC Certified operator with 26 hours and less than 29 hours of emergency operation training over the last 12 months.

CEDRP Proposed High VSL:The position has been staffed with a NERC Certified operator with 22 hours and less than 26 hours of emergency operation training over the last 12 months.

CEDRP Proposed Severe VSL:The position has been staffed with a NERC Certified operator with 22 hours and less than 26 hours of emergency operation training over the last 12 months.

OR

The responsible entity has failed to be staffed with adequately trained and NERC-certified Reliability Coordinator operators, 24 hours per day, seven days per week.

R2. VSL Comments

As currently written the CEDRP does not believe that this requirement is measurable, an objective VSL cannot be written for Lower, Moderate, High, or Severe VSLs.

NERC Response:

1. Name: Guy Zito

Organization: NPCC
Yes **No** ☒ **(If no, skip to the next question.)**
NERC Response:

1. Name: Patricia Metro **Organization:** NRECA
Yes **No** ☒ **(If no, skip to the next question.)**
NERC Response:

1. Name: Charlie Deleon **Organization:** NRG
Yes **No** ☒ **(If no, skip to the next question.)**
NERC Response:

1. Name: Patrick Brown **Organization:** PJM
Yes **No** ☒ **(If no, skip to the next question.)**

NERC Response:

1. Name: David Schiada **Organization:** SCEC
Yes ☒ **No (If no, skip to the next question.)**
Standard Number(s): N/A
Standard Title(s): To The NERC Reliability Standards Development Plan
Element(s) (i.e., Requirement R1.2., Measure M2., etc.): N/A
Suggestion or Comment: Southern California Edison Company ("SCE") hereby submits its comments on the North American Electric Reliability Corporation's ("NERC") annual revision to the NERC Reliability Standards Development Plan (Plan). SCE greatly appreciates the work that went into developing the Plan, and commends the NERC for the extensive overview and depth it provides regarding the development of reliability standards. SCE is generally supportive of the document and the goals NERC has set for the development of reliability standards. While the timelines identified in the Plan, like the Plan itself, are dynamic (non-static/ever changing) and should be used as targets, it should be recognized that timelines may need to be modified as drafting teams obtain more details on the scope of the projects.
Example:
Recommendation for improvement:
NERC Response:

1. Name: Roman Carter **Organization:** SOCO
Yes No ☒ (If no, skip to the next question.)
NERC Response:

2. Does this suggestion or comment address a standards development project identified in the current Reliability Standards Development Plan?

2. Name: Denise Koehn **Organization:** BPA
Yes ☒ **No (If no, skip to the next question.)**
Project Number(s): 2007-07; 2009-07
Project Title(s): Vegetation Management; Cyber Security
Suggestion or Comment: Both of these projects should be "fast-tracked". All of the covered standards are the source of intense pressure from FERC and NERC, through the RROs, to the entities. In light of the importance this pressure implies, these standards should be corrected and perfected as soon as possible. With respect to FAC-003, there is ambiguity in what requirement to report when you have a Category 1 violation. Lots of people think they are supposed to report a violation of R3.4.1 when they have a Category 1 outage. The correct interpretation of what actually constitutes a violation should be clarified in the requirements language. With respect to the CIP standards, these standards are written in confusing, ambiguous, and conflicting ways that are causing the expenditure of large amounts of staff time and labor to try to reach agreement on how to meet them. For example, in both CIP-004 R2 and CIP-004 R3, there are conflicting provisions to provide training and perform personnel risk assessments UPON RECEIVING ACCESS as well as ANNUALLY. The relationship between these two requirements is not identified at all, so a strict interpretation would force an entity to give the training and perform the personnel risk assessment on the same employee several times a year if that person's access privileges changed, for example if they moved from internal job to internal job.
Recommendation for improvement:
NERC Response:

2. Name: Jack Kerr **Organization:** Dominon Virginia Power
Yes **No ☒ (If no, skip to the next question.)**
NERC Response:

2. Name: Louis Slade **Organization:** Dominion Resources Services, Inc.
Yes ☒ **No (If no, skip to the next question.)**
Project Number(s): 2009-01 and 2009-07
Project Title(s): Disturbance and Sabotage Reporting and Cyber Security
Suggestion or Comment: Given the mood of FERC I suggest to move them into 2009. At the very least, participants can fully vet reasons for the need to move with due diligence and caution.
Recommendation for improvement:
NERC Response:

2. Name: Mark L Bennett **Organization:** Gainesville Regional Utilities
Yes **No ☒ (If no, skip to the next question.)**
NERC Response:

2. Name: R. W. Kenyon, J.D., P.E. **Organization:** NERC
Yes **No ☒ (If no, skip to the next question.)**
NERC Response:

2. Name: Suzanna Strangmeier, on behalf of the Standards Interface Subcommittee (SIS) **Organization:** NERC
Yes ☒ **No (If no, skip to the next question.)**
Project Number(s): Project 2006-01, however, it will fall under Project 2006-06
Project Title(s): System Personnel Training, but will fall under Reliability Cooridination
Suggestion or Comment: Some form of R1 is needed, and if R2 is deleted through modifications (additions or retirements) to this and related standards, this standard should be OK.
Recommendation for improvement:
NERC Response:

2. Name: Guy Zito **Organization:** NPCC
Yes **No ☒ (If no, skip to the next question.)**

Project Number(s): All
Project Title(s):
Suggestion or Comment:
Recommendation for improvement:
NERC Response:

2. Name: Patricia Metro **Organization:** NRECA
Yes **No** ☒ (**If no, skip to the next question.)**
NERC Response:

2. Name: Charlie Deleon **Organization:** NRG
Yes **No** ☒ **(If no, skip to the next question.)**
NERC Response:

2. Name: Patrick Brown **Organization:** PJM
Yes **No ☒ (If no, skip to the next question.)**
NERC Response:

2. Name: David Schiada **Organization:** SCEC
NERC Response:

2. Name: Roman Carter **Organization:** SOCO
Yes ☒ **No (If no, skip to the next question.)**
Project Number(s):
Project Title(s):
Suggestion or Comment: See comments in Question #4
Recommendation for improvement:
NERC Response:

3. Does this suggestion or comment address a new topic or issue (please be as specific as possible)?

3. Name: Denise Koehn **Organization:** BPA
Yes ☒ **No (If no, skip to the next question.)**
Reliability Issue:
Suggestion or Comment: The NERC Reliability Standards work plan should consider a review of the need for a standard on Interconnection Operations Services and associated definitions related to ancillary services addressed in the proform.
Example:
Recommendation for improvement: We believe that this review should be a joint NERC/NAESB project and is necessary due to the modifications that NERC has made in its reliability standards and definitions. These need to be reflected appropriately in the proform a language under the tariff schedules (Schedules 1 - 6 & 9).
NERC Response:

3. Name: Jack Kerr **Organization:** Dominon Virginia Power
Yes ☒ **No (If no, skip to the next question.)**
Reliability Issue:
Suggestion or Comment: The Reliability Standards Development Plan should include the recommendations for new or improved reliability standards documented in the final report of the

RTBPTF. One of the primary directives of the task force was to produce recommendations to inform the standards setting process. The best way to inform the process is to incorporate the recommendations into the Reliability Standards Development Plan. Given the enormous amount of work that the Plan currently entails, it would be reasonable to focus on the higher priority recommendations. These include the recommendations for mandatory reliability tools (the Reliability Toolbox).
Example:
Recommendation for improvement:
NERC Response:

3. Name: Louis Slade **Organization:** Dominion Resources Services, Inc.
NERC Response:

3. Name: Mark L Bennett **Organization:** Gainesville Regional Utilities
Yes No ☒ (If no, skip to the next question.)
NERC Response:

3. Name: R. W. Kenyon, J.D., P.E. **Organization:** NERC
Yes ☒ No (If no, skip to the next question.)

Reliability Issue: Reliability of Major BES Components
Suggestion or Comment: Develop Reliability Standards covering the application of major equipment monitoring and diagnostic devices and procedures.
Example: The Reliability Standard would address dissolved gas and moisture sampling processes and the application on on-line monitoring devices to detect incipient faults within BES major components, such as EHV transformers. These processes and devices enable the equipment owner to detect evolving internal faults, allowing corrective action under controlled conditions. In some instances, early warning of evolving faults can permit field repair of the unit, avoiding a system fault and destruction of a major piece of equipment. In other circumstances, the warning obtained permits the equipment owner to monitor the situation and to schedule unit replacement in a deliberate, controlled manner. Again, occurrence of a major system fault and unscheduled loss of a major unit can be avoided. Obviously, such measures can contribute significantly to reliability of the Bulk Electric System.
Recommendation for improvement: Ideally, the envisioned standard would make the application of this technology mandatory for classes of critical equipment, with EHV transformers and shunt reactors an obvious example. Similar diagnostic approaches should be taken on critical EHV and/or major generator Gas Insulated Switchgear. The general approach could follow PRC-005, where the owner must have a system, but particulars are left to the equipment owner. The standard could extend to other equipment condition monitoring such as Doble testing. In many instances, equipment owners already recognize the value of major equipment monitoring and have equipment and/or procedures in place addressing this technology. However, there is far less assurance that monitoring equipment is properly maintained, that scheduled routine sampling is being fully performed, and that full use is being made of data obtained. Again, as with the Protective Relay Standard PRC-005, the standard would contribute to insuring that equipment owners indeed have a program addressing this technology and are indeed following their program. In other instances, equipment owners without such equipment might be obligated to establish a monitoring program.
NERC Response:

3. Name: Suzanna Strangmeier, on behalf of the Standards Interface Subcommittee (SIS) **Organization:** NERC
Yes **No ☒ (If no, skip to the next question.)**
Reliability Issue: ensuring adequate staffing of trained and certified personnel for real-time operations
Suggestion or Comment: or R1., clarification on two items 1) the meaning of training versus certification, since an individual may be certified yet not have completed training for a given timeframe, and 2) to identify what constitutes violation timeframes, one hour versus a shift, and the boundaries of the timeframes where real-time shifts may include a spread over two days (1800-0600).
Example: see above
Recommendation for improvement: Provide additional, concrete language (numbers, or other qualifications) to clarify the meaning behind the general around-the-clock operations with respect to variations between staffing schedules hours/shifts, and the information needed to know how to identify clearly a violation.
NERC Response:

3. Name: Guy Zito **Organization:** NPCC
Yes ☒ **No (If no, skip to the next question.)**
Reliability Issue:
Suggestion or Comment:

Example:
Recommendation for improvement: Due to the ever increasing number of standards and projects and the aggressive schedule with which NERC has to address FERC comments, the RSC believes it is of vital importance that the individual drafting team develops, and adheres to the extent possible, milestones and goals and their associated deliverable dates. This will be of great benefit to the ever constrained resources of the industry and assist with the drafting efforts as well as make it easier and transparent to an organization if they want to participate in a drafting team effort. It has proven very problematic to coordinate the development of Regional standards with the ERO standards if the drafting teams are allowed to work to their own schedules and not respect the timelines given or at least to develop their own schedules and publish them for the industry and update those schedules as issues such as voluminous comments to postings occur.
NERC Response:

3. Name: Patricia Metro **Organization:** NRECA
Yes ☒ **No (If no, skip to the next question.)**
Reliability Issue: # of projects and associated timelines
Suggestion or Comment: NRECA is concerned there is an unrealistic expectation that the projects included in the existing Standards Development Plan can be completed in the timeline provided for those projects. Because of this, it is imperative that the projects be prioritized with deadlines that are feasible for completion.
Example:
Recommendation for improvement:

NERC Response:

3. Name: Charlie Deleon **Organization:** NRG
Yes ☒ No (If no, skip to the next question.)
Reliability Issue: TLR procedures are not where they need to be today to promote a healthy, reliable, and fair transmission system.
Suggestion or Comment: NERC has acknowledged that improvements need to be made to the TLR process and that the Interchange Distribution Calculator (IDC) used by Reliability Coordinators is not sufficient to show actual system use. The serious increase in number and excessive use of TLR Level 5's in certain areas of the eastern interconnect result in reduced system reliability. NERC must take action to revise its TLR standards to address these issues. Flaws in the IDC calculator lead to flaws in the curtailments and NNL relief obligations relied upon by Reliability Coordinators to ensure the integrity of the transmission system. The IDC calculator does not include real time data while modeling load uses. The IDC calculator, while looking at interchange transactions (i.e., transaction where the source and the sink are in different balancing authorities) correctly, does not properly reflect internal transactions (i.e., transactions where the source and sink are in the same balancing authority). This allows firm transactions to be cut on a constrained flowgate before non-firm transactions. These issues are making it extremely difficult for Balancing Authorities to reliably manage their systems and plan for emergencies.
Example: For example, a single IPP located in Balancing Authority A and simultaneously selling firm power into Balancing Authority B and non-firm power to Balancing Authority B could have its firm transmission to Balancing Authority B curtailed by the IDC, while the non-firm transmission into Balancing Authority A would remain intact. This is true even if the transactions flowed across the same constrained flowgate because the internal Balancing Authority A schedule would not be considered by

the IDC. Further, since every transaction in or out of the Balancing Authority B is considered interchange transactions, the IDC evaluates each Balancing Authority B firm transmission transactions for curtailment. Internal purchases by Balancing Authority A, however, are not subject to the same rigorous curtailment analysis.
Recommendation for improvement: The IDC needs to be modified to take into account real time topology. Due to the lack of any requirement to update input information, the IDC uses static information that does not reflect real time operations resulting IDC calculations which determine flowgate relief being incorrect since they are solving for constraints based on a transmission topology which differs from real time system topology. Also, the IDC does not properly capture and reflect internal schedules. The impacts on the flowgate are not considered by the IDC even though they could have a significant impact on the constraint. The result is that entities engaging in interchange transactions bear a disproportionate share of the system's reliability obligations. The current TLR process allows non-firm transactions with a TDF of less than 5% to continue to flow. All contributing non-firm transactions should be curtailed first NERC with input from the industry needs to address the flaws in the current process today that are threatening system reliability.
NERC Response:

3. Name: Patrick Brown **Organization:** PJM
Yes ☒ No (If no, skip to the next question.)
Reliability Issue: Reliability Standards Development Plan 2008-2010
Suggestion or Comment: PJM commends the NERC staff and industry contributors that put many hours of work into the development and revision of the Reliability Standards Development Plan: 2008-2010. Such efforts are greatly appreciated, and are key to guiding the work necessary in enhancing and ensuring the reliability of the bulk electric system. However, PJM is concerned with the scope and

number of projects contained in the Reliability Standards Development Plan: 2008-2010. The plan contains 36 Standards Development Projects, provision for 6 high priority projects and up to 17 requests for formal interpretations of existing standard requirements in 2008 & 2009. With up to 9 standards included in each project, this presents an impressive undertaking that will tax not only NERC's resources, but that of the rest of the industry as well. With up to 15 industry representatives on each project, in addition to the need for thorough review and analysis of each recommended change, the limited NERC staff and industry resources will not be able to effectively support this large number of projects. This lack of resources, as well as unexpected delays in projects initiated in previous years, has already resulted in a number of projects being carried over into subsequent years. In addition to the increase in the overall number of projects, the current plan has also expanded the scope of work within each project to include a number of additions and modifications. Although this expansion is based in part on FERC directives emphasizing the urgency of the development of reliability standards, PJM does not believe that the work plan recognizes the reality of limited staff and industry resources to complete the projects as outlined in the current version of the plan. PJM recommends that NERC reevaluate its plan and develop a smaller list of priority projects that will yield the greatest impact to the reliability of the bulk electric system. This will allow NERC and the industry to address FERC and industry concerns regarding the reliability and security of the system while at the same time effectively managing the standards development work load. PJM also believes that the development of violation risk factors needs to be done in a uniform manner across all standards. NERC, with industry and regulatory input, should develop a well defined process for the development of VRF's to ensure this uniformity. PJM fully supports NERC coordination with NAESB. However, the development of NERC Reliability Standards should be closely monitored to ensure that all requirements related to business practices are developed under NAESB Standards rather than being included in the NERC Standards. A good example is the MOD standards, where the frequency of AFC and ATC calculations, an obvious business practice, was included in a NERC Reliability Standard. Again, PJM commends the NERC staff and industry contributors for their efforts in compiling a comprehensive work plan. We believe that the suggestions we have provided above will enhance the good work that has already been done, and help to ensure the security and reliability of the bulk electric system.
Example:
Recommendation for improvement:
NERC Response:

3. Name: David Schiada **Organization:** SCEC
Yes No (If no, skip to the next question.)
NERC Response:

3. Name: Roman Carter **Organization:** SOCO
Yes No ☒ (If no, skip to the next question.)
NERC Response:

4. Please provide any additional information you feel will assist the NERC standards staff in addressing this suggestion or comment that could not be captured in questions 1, 2, or 3 above:

4. Name: Denise Koehn **Organization:** BPA
NERC Response:

4. Name: Jack Kerr **Organization:** Dominon Virginia Power
Suggestion or Comment: I am willing to assist NERC staff in the effort of prioritizing the recommendations from the RTBPTF Report and transcribing them into whatever format is appropriate for the Standards Development Plan.
NERC Response:

4. Name: Louis Slade **Organization:** Dominion Resources Services, Inc.
Suggestion or Comment: Develop timeline for regions to develop 'fill-in-the blank' standards. Currently some regions are doing nothing while others have gone beyond the original 4 standards. Entities participating in many regions find this inconsistency to be frustrating.
Example:
Recommendation for improvement: Develop timeline for the 4 already identified 'fill-in-the blank' standards. Develop process that requires region(s) desiring additional regional standards first justify the need before NERC rather than develop and then submit to NERC hoping for approval.

Additional information:
NERC Response:

4. Name: Mark L Bennett **Organization:** Gainesville Regional Utilities
Suggestion or Comment: My comment is more of a global observation. Of all the North American entities that are doing their best to accommodate the ever-changing standards and interpretation of the standards, it would be my suggestion to review and enforce what presently exists and ensure that all the standards are clear and unambiguous. Which I believe has taken place for the most part. In addition, I believe it is time to “resist implementing and developing new standards" until the industry catches up with all the changes that have taken place in recent years. Staffing has become a major issue with some of the smaller entities as to understanding and responding to the extreme amount of data and time required to ensure that all the standards are met within specific time frames.
Example:
Recommendation for improvement: Give the industry time to adapt to the changes that have taken place in the recent past.
Additional information:
NERC Response:

4. Name: R. W. Kenyon, J.D., P.E. **Organization:** NERC
Suggestion or Comment: None
Example: None

Recommendation for improvement: None
Additional information: None
NERC Response:

4. Name: Suzanna Strangmeier, on behalf of the Standards Interface Subcommittee (SIS) **Organization:** NERC
NERC Response:

4. Name: Guy Zito **Organization:** NPCC
Suggestion or Comment: The comments provided are to provide guidance for the 2009-2011 plan. We understand that a draft version has already been made, but is not yet available. The solicitation of comments should have been a precursor to its drafting, or should have been posted after its release to allow for comment on the document itself. The following comments are on the 2008-2010 Work Plan and it is envisioned that the new work plan will address these. In the Volume I Table of Contents the page number for Appendix A is incorrect (it is shown as page 1). Volume I should be entitled Work Plan--remove the reference to schedule. Appendix A in Volume I have an overall "general" work plan for the projects. Move this general work schedule as a lead document to Volume II Project Descriptions for Long Range Plan, and then with each project include a detailed work plan that specifies dates for the drafting teams to achieve milestones. This will allow for more accurate and accountable project management. Throughout the document Volume II is referred to as Appendix B. Suggest that the Appendix B

designation be removed.
Example:
Recommendation for improvement:
Additional information:
NERC Response:

4. Name: Patricia Metro **Organization:** NRECA
Suggestion or Comment: "Roles and Responsibilities: Standards Drafting Team Activities" guideline
Example:
Recommendation for improvement:
Additional information: NRECA stresses the importance of completing the "Roles and Responsibilities: Standards Drafting Team Activities" guideline. Clearly defined roles and responsibilities for the Standards Committee, Standard Drafting Team Members, NERC Staff and Regulatory Staff will expedite the Standards Development Process enabling the completion of more projects included in the Standards Development Plan.
NERC Response:

4. Name: Charlie Deleon **Organization:** NRG
NERC Response:

4. Name: Patrick Brown **Organization:** PJM
NERC Response:

4. Name: David Schiada **Organization:** SCEC
NERC Response:

4. Name: Roman Carter **Organization:** SOCO
Suggestion or Comment: 1. Work Plan Description (page 8) and Strategy for Project Resources (page 12): We agree that NERC's Plan should recognize the reality of limited staff and industry manpower resources available to complete the scheduled projects within the allotted time frame. The Plan suggests that NERC also recognizes the ongoing development of regional standards and the unexpected influx of interpretation requests from industry that have adversely impacted the deliverables in the plan and resulted in four projects being deferred to 2009. Based on the NERC Standards Under Development website, there are currently 37 projects under development, out for comment, or seeking interpretation. Given that industry utilizes a limited set of existing experienced personnel to comment on these projects and that these people have other job responsibilities critical to the reliability of the bulk power system, the time required to monitor standards development documentation, participate in standards development meetings, and prepare comments on the standards puts a tremendous burden on the limited number of personnel that have the necessary expertise and on industry as a whole. While we concur with postponing work on four projects, we believe that further prioritization is required and that actions should be taken to bring the number of standards being developed at any given time in line with available NERC and industry personnel resources. It is not clear exactly how to balance manpower limitations against perceived critical reliability issues, but this balance must be maintained in order to ensure the quality and effectiveness of

the reliability standards being developed. 2. Issues Related to the Applicability of a Standard (page 18): The 3-year plan should provide more guidance as to who can be held accountable for NERC standards. For example, in paragraph 3 of page 18, the Plan describes how a DP is held accountable even though they own and operate facilities in the local distribution of electrical energy. Since they perform functions affecting and essential to the reliability of the bulk power system, they are accountable for certain reliability standards. What about entities such as a Regional Entity who perform a function such as the IA. By registering as the IA, they coordinate the transfer power across the bulk power system. Can the Regional Entity be penalized for non-compliance even though they are not owners, users, or operators of the bulk power system? 3. Coordination with NAESB (page 25): The plan mentions that NERC coordinates the development of all standards with NAESB and the ISO/RTO Council through a memorandum of understanding and through the Joint Interface Committee (JIC). NERC no longer lists the JIC as a committee on their Website. Has this committee been dissolved and replaced with some other group to carry out this function?
Example:
Recommendation for improvement:
Additional information:
NERC Response: