UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

North American Electric Reliability Corporation	**)** **)**	**Docket Nos. RM05-17-000** **RM05-25-000** **RM06-16-000**

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION INFORMATIONAL FILING OF RELIABILITY STANDARDS DEVELOPMENT PLAN 2014-2016 PURSUANT TO SECTION 310 OF THE NERC RULES OF PROCEDURE

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November 8, 2013

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I. INTRODUCTION

The North American Electric Reliability Corporation ("NERC") hereby submits its Reliability Standards Development Plan: 2014-2016 ("2014 Development Plan") in accordance with Section 310 of the NERC Rules of Procedure. The 2014 Development Plan, provided in Attachment A hereto, is submitted for informational purposes only. The NERC Board of Trustees approved the 2014 Development Plan on November 7, 2013.

II. NOTICES AND COMMUNICATIONS

Notices and communications regarding this filing may be addressed to the following:[1]

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[1] Persons to be included on the Commission's service list are identified by an asterisk. NERC respectfully requests a waiver of Rule 203 of the Commission's regulations, 18 C.F.R. § 385.203 (2013), to allow the inclusion of more than two persons on the service list in this proceeding.

III. BACKGROUND

In 2006, NERC developed an initial version of a plan for Reliability Standards development entitled the Reliability Standards Development Plan: 2007–2009. NERC has since updated the plan annually, and the 2014–2016 version of the plan is presented in this filing. Consistent with previous versions, the 2014 Development Plan is filed for informational purposes and no specific Federal Energy Regulatory Commission ("FERC" or "Commission") action is requested at this time.

The 2014 Development Plan is intended to:

1. Serve as a management tool to guide and coordinate the development of Reliability Standards and provide benchmarks for assessing progress;
2. Serve as a communications tool for coordinating standards development work with applicable governmental agencies in the United States and Canada and for engaging stakeholders in Reliability Standards development activities; and
3. Provide a basis for developing annual plans and budgets for the NERC Reliability Standards Program.

As with prior Reliability Standards Development Plans, NERC obtained industry input on the 2014 Development Plan, including input on potential future Reliability Standards development projects. NERC anticipates the Reliability Standards development work outlined in the 2014 Development Plan will be dynamic, and will be updated periodically as projects are completed or as new needs are identified and projects are considered. NERC also recognizes that new priorities may require flexibility in work planning to ensure the activities are given appropriate resources and priority.

By this filing, NERC informs FERC and other interested parties of the changes to the content of the 2013-2015 Reliability Standards Development Plan ("2013 Development Plan"). NERC also identifies changes in project timelines and completion dates originally outlined in the 2013 Development Plan that are reflected in the 2014 Development Plan.

IV. 2014 DEVELOPMENT PLAN

A. Summary of 2014 Development Plan

The 2014 Development Plan builds upon the foundation established by previous plans and identifies the current plans and priorities for development and modification of NERC Reliability Standards in the immediate three-year time horizon. It includes several significant incremental improvements to facilitate the transformation of NERC Reliability Standards to "steady-state."[2] The 2014 Development Plan continues to emphasize addressing outstanding regulatory directives and the application of Paragraph 81 criteria[3] and results-based concepts to all existing and future Reliability Standard projects. In an improvement to prior versions, the 2014 Development Plan also provides an overview of each Reliability Standard family with respect to its status on the path to steady-state. The 2014 Development Plan also prioritizes future projects with consideration of, among other things, the rankings of NERC's Reliability Issues Steering Committee ("RISC"), regulatory directives and deadlines, and the 2013 Independent Expert Review Panel ("IERP") report.[4]

B. Project Schedule and Timeline Updates

Below is an update on the status of projects identified in the 2013 Development Plan. The 2013 Development Plan identified 30 active projects to be conducted over a three-year

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[2] For purposes of the 2014 Development Plan, stead-state means a stable set of clear, concise, high-quality, and technically sound Reliability Standards that are results-based.

[3] Paragraph 81 refers to Paragraph 81 of FERC's March 15, 2012 Order issued on NERC's Find, Fix and Track process. *North American Electric Reliability Corp.*, 138 FERC ¶ 61,193, at P 81, *order on reh'g and clarification*, 139 FERC ¶ 61,168 (2012). In that paragraph, FERC stated that certain requirements could be removed from NERC's Reliability Standards if they "provide little protection to the reliable operations of the BES," are redundant or unnecessary. The Commission has proposed to retire certain requirements based on these criteria. *Electric Reliability Organization Proposal to Retire Requirements in Reliability Standards*, 143 FERC ¶ 61,251 (2013).

[4] In 2013, NERC retained five industry experts to independently review the NERC Reliability Standards, setting the foundation for a plan that will result in a set of clear, concise and sustainable body of Reliability Standards. Their report is available at: http://www.nerc.com/pa/Stand/Standards%20Development%20Plan%20Library/Standards_Independent_Experts_Review_Project_Report.pdf.

period, the following 18 of which were completed in 2013 or are expected to be completed by the end of the first quarter of 2014:

- Project 2007-02 Operating Personnel Communications Protocol
- Project 2007-06 System Protection Coordination
- Project 2007-09 Generator Verification
- Project 2007-12 Frequency Response
- Project 2007-17.2 Protection System Maintenance and Testing
- Project 2008-12 Coordinate Interchange
- Project 2010-01 Support Personnel Training
- Project 2010-03 Modeling Data
- Project 2010-04 Demand Data
- Project 2010-05.1 Phase 1 of Protection Systems: Misoperations
- Project 2010-11 TPL Table 1 Order
- Project 2010-13.2 Generator Relay Loadability
- Project 2010-14.1 Phase 1 of Balancing Authority Reliability-Based Control: Reserves
- Project 2010-17 Definition of Bulk Electric System (BES)
- Project 2012-05 ATC Revisions
- Project 2012-08.1 NERC Glossary Definitions Phase 1
- Project 2013-03 Geomagnetic Disturbance Mitigation Measures (Stage 1)
- Project 2013-04 Voltage and Reactive Control

The following 13 projects identified in the 2013 Development Plan are expected to be completed after the first quarter of 2014:

- Project 2007-11 Disturbance Monitoring
- Project 2007-17.3 Protection System Maintenance and Testing Auxiliary Relays
- Project 2008-02 Undervoltage Load Shedding
- Project 2009-02 Real-Time Reliability Monitoring and Analysis Capabilities
- Project 2010-05.2 Phase 2 of Protection System Misoperations: SPS/RAS
- Project 2010-08 Functional Model Glossary Revisions
- Project 2010-13.3 Generator Relay Loadability Stable Power Swings
- Project 2013-03 Geomagnetic Disturbance Mitigation Measures (Stage 2)
- Project 2009-03 Emergency Operations (implementation of recommendations from five-year reviews)
- Project 2010-02 Connecting New Facilities to the Grid (implementation of recommendations from five-year reviews)
- Periodic Review of BAL-004, -005, and -006 (implementation of recommendations from five-year reviews)
- Project 2012-09 IRO Review (implementation of recommendations from five-year reviews)
- Project 2012-13 NUC Review (implementation of recommendations from five-year reviews)

Additionally, the following 14 projects have been retired:[5]

- Project 2009-07 Reliability of Protection Systems
- Project 2010-16 Definition of System Operator (combined with Project 2010-01)
- Project 2012-01 Equipment Monitoring and Diagnostic Devices
- Project 2012-02 Physical Protection
- Project 2012-04 Protection System Commissioning Testing
- Project 2012-07 Obsolescence Review
- Project 2012-14 Risk Analysis
- Project 2012-15 Flow Limited Paths
- Project 2012-11 FAC Review (combined with Project 2010-02)
- Project 2009-04 Phasor Measurements
- Project 2009-05 Resource Adequacy Assessments (including its outdated SAR)
- Project 2010-14.2 Phase 2 of Balancing Authority Reliability-Based Controls (converted into Periodic Review of BAL-004, -005, and -006)
- Project 2012-03 PRC-004 VSLs
- Project 2013-01 Cold Weather Preparedness

In the 2014 Development Plan, each Reliability Standards project, excluding those projects that are scheduled or anticipated to be completed before the end of the first quarter 2014, is prioritized as High, Medium, Low, or Pending Technical Committee input. These rankings are based on, among other things, RISC Category Rankings, regulatory directives, regulatory deadlines, and recommendations from the IERP report. The following projects are categorized as High priority: Project 2008-02 Undervoltage Load Shedding; Project 2009-02 Real-Time Reliability Monitoring and Analysis Capabilities; Project 2013-03 Geomagnetic Disturbance Mitigation Measures (Stage 2); and Project 2009-03 Emergency Operations. Medium priority projects include: Project 2007-11 Disturbance Monitoring; Project 2010-05.2 Phase 2 of Protection System Misoperations: SPS/RAS; Periodic Review of BAL-004, -005, and -006; and Project 2012-09 IRO Review. Low priority projects include: Project 2010-02 Connecting New Facilities to the Grid; Project 2010-08 Functional Model Glossary Revisions; and Project 2012-13 NUC Review. Projects pending technical committee input include Project 2007-17.3

[5] The retirement of these Reliability Standard projects was coordinated and endorsed by the Standards Committee and RISC.

Protection System Maintenance and Testing Auxiliary Relays and Project 2010-13.3 Generator Relay Loadability Stable Power Swings.

V. CONCLUSION

As discussed above, the 2014 Development Plan was developed in accordance with Section 310 of the NERC Rules of Procedure and identifies the current plans and priorities for development and modification of NERC Reliability Standards in the immediate three-year time horizon.

Respectfully submitted,

/s/ S. Shamai Elstein

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Date: November 8, 2013

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

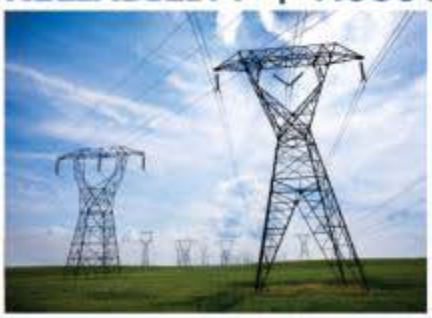
Reliability Standards Development Plan

2014–2016

October 14, 2013

RELIABILITY | ACCOUNTABILITY



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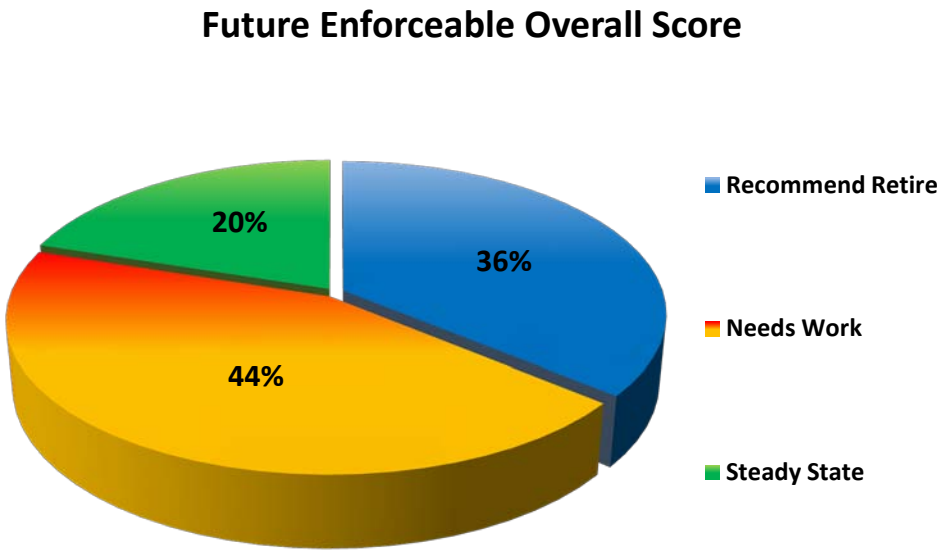
Executive Summary

The 2014–2016 Reliability Standards Development Plan (RSDP or Plan) is a continuation of the bold new approach set forth in the 2013–2015 Plan.[1] It includes several significant incremental improvements to facilitate the transformation of NERC Reliability Standards to "steady-state" (for purposes of this Plan, that means a stable set of clear, concise, high-quality, and technically sound Reliability Standards that are results-based, including retirement of requirements that do little to promote reliability). As in the 2013–2015 Plan, this RSDP continues to emphasize addressing outstanding regulatory directives and the application of Paragraph 81[2] (Para 81) criteria and results-based concepts to all existing and future Reliability Standard projects. As an enhancement to the approach in the 2013–2015 Plan, this RSDP provides a holistic overview of each Reliability Standard family with respect to its status on the path to steady-state. The Plan also prioritizes 2014 Standard projects with consideration of the Reliability Issues Steering Committee (RISC) rankings,[3] regulatory directives and deadlines, and the 2013 Independent Expert Review Panel (IERP) report.[4]

By addressing the known ongoing work along with the new prioritizations outlined in this Plan, NERC expects to be at steady-state by the end of 2015.

Figure 1: Current View of Steady-State from the IERP



[1] http://www.nerc.com/files/2013-2015_RSDP_BOT_Approved_12-19-12.pdf.

[2] The March 15, 2012 FERC Order Accepting with Conditions the Electric Reliability Organization's Petition Requesting Approval of New Enforcement Mechanisms and Requiring Compliance Filing, *North American Electric Reliability Corporation,* 138 FERC ¶ 61,193 at P 81 provided the opportunity for the ERO to evaluate requirements, which resulted in the Paragraph 81 project. The Paragraph 81 criteria are in the Phase I Technical Paper on the NERC website at: http://www.nerc.com/pa/Stand/Pages/Project2013-02_Paragraph_81.aspx.

[3] RISC reviewed and provided input on the use of RISC's rankings in the Standard families as well as in the Plan's prioritization approach.

[4] http://www.nerc.com/pa/Stand/Standards%20Development%20Plan%20Library/Standards_Independent_Experts_Review_Project_Report.pdf . The IERP report defines steady-state as Reliability Standards that meet the quality and content criteria defined in the IERP report. They are clear, concise, sustainable (stable), necessary for accountability, and sufficient to maintain the reliability of the Bulk Power System. These standards do not require further work absent a change in risks, technology, practice, or other impetus.

2013 Progress Report

The 2013–2015 RSDP identified 30 active projects to be conducted over the three-year period, of which 18 will either be completed by 2013 year-end or are scheduled to be completed by the end of first quarter 2014.

Projects that were listed in the 2013–2015 RSDP:

Completed in 2013 or scheduled to be completed by the end of first quarter 2014 (18)

- Project 2007-02 Operating Personnel Communications Protocol
- Project 2007-06 System Protection Coordination
- Project 2007-09 Generator Verification
- Project 2007-12 Frequency Response
- Project 2007-17.2 Protection System Maintenance and Testing
- Project 2008-12 Coordinate Interchange
- Project 2010-01 Support Personnel Training
- Project 2010-03 Modeling Data
- Project 2010-04 Demand Data
- Project 2010-05.1 Phase 1 of Protection Systems: Misoperations
- Project 2010-11 TPL Table 1 Order
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- Project 2010-17 Definition of Bulk Electric System (BES)
- Project 2012-05 ATC Revisions
- Project 2012-08.1 NERC Glossary Definitions Phase 1
- Project 2013-03 Geomagnetic Disturbance Mitigation Measures (Stage 1)
- Project 2013-04 Voltage and Reactive Control

To be completed after 2013 (not inclusive of projects listed above) (13)

- Project 2007-11 Disturbance Monitoring
- Project 2007-17.3 Protection System Maintenance and Testing Auxiliary Relays
- Project 2008-02 Undervoltage Load Shedding
- Project 2009-02 Real-Time Reliability Monitoring and Analysis Capabilities
- Project 2010-05.2 Phase 2 of Protection System Misoperations: SPS/RAS
- Project 2010-08 Functional Model Glossary Revisions
- Project 2010-13.3 Generator Relay Loadability Stable Power Swings
- Project 2013-03 Geomagnetic Disturbance Mitigation Measures (Stage 2)

- Implementation of Recommendations from Five-Year Reviews:
    - Project 2009-03 Emergency Operations
    - Project 2010-02 Connecting New Facilities to the Grid
    - Periodic Review of BAL-004, -005, and -006
    - Project 2012-09 IRO Review
    - Project 2012-13 NUC Review

Projects that have been retired (14)[5]:

- Project 2009-07 Reliability of Protection Systems
- Project 2010-16 Definition of System Operator (combined with Project 2010-01)
- Project 2012-01 Equipment Monitoring and Diagnostic Devices
- Project 2012-02 Physical Protection
- Project 2012-04 Protection System Commissioning Testing
- Project 2012-07 Obsolescence Review
- Project 2012-14 Risk Analysis
- Project 2012-15 Flow Limited Paths
- Project 2012-11 FAC Review (combined with Project 2010-02)
- Project 2009-04 Phasor Measurements
- Project 2009-05 Resource Adequacy Assessments (including its outdated SAR)
- Project 2010-14.2 Phase 2 of Balancing Authority Reliability-Based Controls (converted into Periodic Review of BAL-004, -005, and -006)
- Project 2012-03 PRC-004 VSLs
- Project 2013-01 Cold Weather Preparedness

[5] The retirement of these Reliability Standard projects was coordinated and endorsed by the Standards Committee and RISC.

Progress on regulatory directives:
There was significant progress in 2013 on resolving regulatory directives issued by the Federal Energy Regulatory Commission (FERC).

Table 1: Progress on Regulatory Directives		
Year-end 2012		**191**
Q1 2013	9	
Q2 2013	46	
Projected to be resolved in Q3 2013	20	
Projected to be resolved in Q4 2013	74	
Remaining directives year-end 2013 (not including directives issued in 2013)		**42**
Projected to be resolved in Q1 2014	20	
Projected to be resolved in Q2 2014	22	
Remaining directives to be resolved in 2014 (newly issued minus resolved in 2013)		**24**
FERC directives newly issued 2013 YTD	29	
Resolved FERC directives that were newly issued 2013 YTD	5	

Outstanding FERC directives at year-end 2012 (191 directives):

Filed through Q2 2013: 55 directives

Scheduled to be completed in 2013: 94 directives

- Includes informal development projects: 69 directives (12 of which are proposed for retirement in the FERC Paragraph 81 Notice of Proposed Rulemaking[6] (Para 81 NOPR)).
- Reduced by three directives proposed for retirement in the Para 81 NOPR.

To be completed in 2014: 42 directives

- Reduced by seven directives proposed for retirement in the Para 81 NOPR.

Additional FERC directives issued in 2013: 29 directives

- FERC issued 29 additional directives in 2013, which NERC has already begun to address. The 29 directives that FERC issued include:
    - Four directives and 13 guidances[7] over Stage 1 and Stage 2 of the Geomagnetic Disturbance Mitigation Project in FERC Order No. 779.[8]
    - Five directives for the Definition of the Bulk Electric System in the FERC order issued on December 20, 2012.[9]

[6] *Electric Reliability Organization Proposal to Retire Requirements in Reliability Standards*, 143 FERC ¶ 61,251 (2013).
[7] The final count is currently being determined.
[8] *Reliability Standards for Geomagnetic Disturbances*, Final Rule, 143 FERC ¶ 61,147 (May 16, 2013).
[9] These directives were issued in *Revisions to Electric Reliability Organization Definition of Bulk Electric System and Rules of Procedure*, 141 FERC ¶ 61,236 (December 20, 2012), after the 2012 year-end number of directives was established. One of the directives was resolved in the April 4, 2013 NERC Compliance Filing.

- Five directives in the FERC Order No. 777 approving FAC-003-2.[10]
- Two directives in FERC Order No. 772 approving the SERC Regional Standard PRC-006-SERC-01.[11]

- By the end of Q2 2013, five of these directives have been resolved:
  - Project 2010-17 Definition of Bulk Electric System (BES): one
  - Transmission Vegetation Management (FAC-003-2): two
  - Protection and Control (PRC-006-SERC-01): two

[10] FERC Order No. 777, *Revisions to Reliability Standard for Transmission Vegetation Management* (March 21, 2013).

[11] These directives were issued by FERC in Order No. 772, *Regional Reliability Standard PRC-006-SERC-01 – Automatic Underfrequency Load Shedding Requirements* (December 20, 2012) after the 2012 year-end number of directives was established and were resolved in the March 11, 2013 NERC Compliance Filing in response to FERC Order No. 772.

Known Ongoing Work

The 2013–2015 RSDP was the beginning of the transition to a steady-state set of Reliability Standards by the end of 2015, if not sooner. Attachment 1 includes the 2013 Reliability Standard Family Snapshots, which present information related to the transition of each family to steady-state. The snapshots are a static view of a dynamic process and are provided for informational and illustrative purposes only.

Given the dynamic nature of the Reliability Standards development process, the Project Management and Oversight Subcommittee (PMOS) of the NERC Standards Committee and NERC Standards staff work together to maintain a Project Tracking Spreadsheet that is updated approximately once a month. The purpose of the Project Tracking Spreadsheet is to provide an overview of all ongoing project statuses. Each project within the spreadsheet has a planned and actual/projected row for the status to show if the project is on schedule, ahead of schedule, or behind schedule. The columns that track each project contain the project name and number with a link to its project page, the deliverables (e.g., MOD-001-2), the number of Para 81 requirements, the number of regulatory directives or guidance, the PMOS liaison assigned to the project, the NERC standards developer, and the timeline by month. The Project Tracking Spreadsheet is on the NERC Standards home page on the left navigation tab.[12]

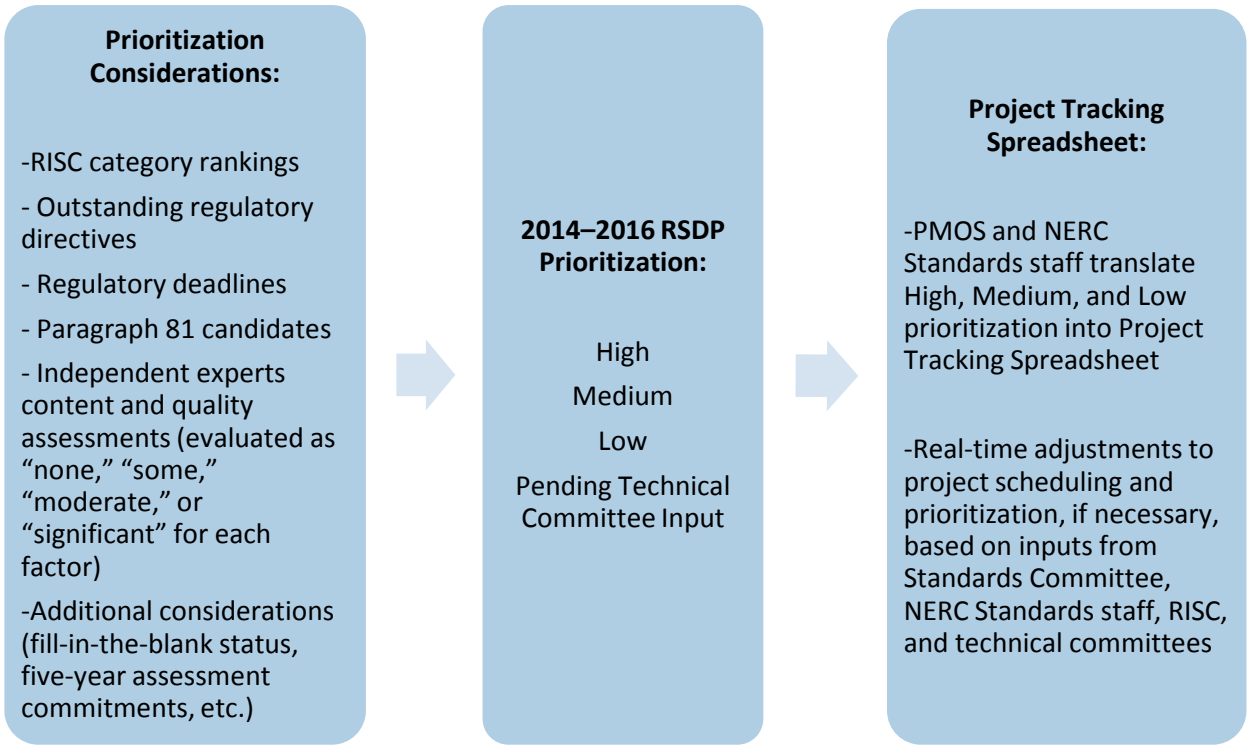
Figure 2: Screen Shot of Project Tracking Spreadsheet Location

[12] http://www.nerc.com/pa/Stand/Pages/default.aspx.

Future Project Prioritization

In its approach to prioritizing Reliability Standards projects, the RSDP considered how Reliability Standard family priorities are applied to individual projects and outstanding work. Specific elements included: (1) RISC Category Rankings; (2) regulatory directives; (3) regulatory deadlines; (4) Reliability Standard requirement candidates for retirement; (5) the IERP content and quality assessments; and (6) additional considerations (fill-in-the-blank status and five-year assessment commitments). The prioritization gave primary consideration to RISC Category Rankings, regulatory directives, and regulatory deadlines, which was further informed by the other prioritization elements. Based on the application of these elements, this section prioritizes each Reliability Standard project as High, Medium, Low, or Pending Technical Committee input.

The following flowchart represents the prioritization steps:



The prioritization in this RSDP does not include projects that are scheduled or anticipated to be completed before the end of the first quarter 2014, since prioritizing those projects here would likely result in transitional issues between the 2013–2015 RSDP and this RSDP. The prioritization reflects known information; as circumstances warrant, prioritization of existing Reliability Standard projects is subject to change. Facts and circumstances like completion timelines of ongoing work, any additional regulatory activity, or the need to combine or split particular projects may affect subsequent prioritization evaluations.

To assist the Standards Committee and NERC Standards staff on the scheduling of Reliability Standard projects over 2014 and into 2015, NERC Standards staff will coordinate scheduling and posting activities of Reliability Standard projects with the Standards Committee and the PMOS. For purposes of tracking

implementation of the RSDP Reliability Standard projects, PMOS and NERC Standards staff will continue to coordinate and track the projects via the Project Tracking Spreadsheet referenced earlier in this Plan. Reliability Standard projects submitted or created after completion of this RSDP will use the same six prioritization elements described above, as applicable.

Applying the prioritization considerations to the Reliability Standard projects to be completed after first quarter 2014 results in the following prioritization for 2014:

High Priority

- Project 2008-02 Undervoltage Load Shedding
    - RISC: high-priority area
    - Four FERC directives
    - IERP considerations: some content and some quality
    - Commitment to FERC to resolve fill-in-the-blank nature from five-year assessment
- Project 2009-02 Real-Time Reliability Monitoring and Analysis Capabilities
    - RISC: high-priority area
    - One FERC directive
    - IERP considerations: situation awareness gap
- Project 2013-03 Geomagnetic Disturbance Mitigation Measures (Stage 2)
    - RISC: low-priority area
    - 14 FERC directives
    - Regulatory deadline
- Project 2009-03 Emergency Operations
    - RISC: medium-priority area
    - 10 FERC directives
    - 14 Para 81 candidates
    - IERP considerations: significant content and moderate quality

Medium Priority

- Project 2007-11 Disturbance Monitoring
    - RISC: medium-priority area
    - One FERC Directive
    - IERP considerations: significant content and moderate quality
    - Commitment to FERC to resolve fill-in-the-blank nature from five-year assessment

- Project 2010-05.2 Phase 2 of Protection System Misoperations: SPS/RAS
    - RISC: high-priority area
    - Two FERC directives
    - Commitment to FERC to resolve fill-in-the-blank nature from five-year assessment
- Periodic Review of BAL-004, -005, and -006
    - RISC: high-priority area
    - 11 Para 81 candidates
    - IERP considerations: significant content and moderate quality
- Project 2012-09 IRO Review
    - RISC: high-priority area
    - Three Para 81 candidates
    - IERP considerations: moderate content and some quality

Low Priority

- Project 2010-02 Connecting New Facilities to the Grid
    - RISC: low-priority area
    - Two FERC directives
    - 11 Para 81 candidates
    - IERP considerations: moderate content and moderate quality
- Project 2010-08 Functional Model Glossary Revisions
- Project 2012-13 NUC Review
    - RISC: high-priority area
    - IERP: steady-state

Pending technical committee input:

- Project 2007-17.3 Protection System Maintenance and Testing Auxiliary Relays
- Project 2010-13.3 Generator Relay Loadability Stable Power Swings

Appendix 1 – 2013 Reliability Standard Family Snapshots

2013 Reliability Standard Family Snapshots Background

This appendix was created in support of the 2014–2016 RSDP's goal to continue the transformation of the NERC Reliability Standards to steady-state. The 2013 Reliability Standard Family Snapshots provide a holistic overview of the state of each Reliability Standard family.

The following paragraphs provide an overview and explanation of the major sections of each Reliability Standard family snapshot in this appendix. The snapshots are then presented in alphabetical order based on family name.

Status of Standards

The Status of Standards section provides information on the enforceability of the Reliability Standards within each family. These numbers are subject to change and are expected to change over time as a result of pending filings for regulatory approval and retirement.

Periodic Review Status

During 2013, teams began five-year reviews of standards in the BAL, EOP, FAC, IRO, and NUC families.[13] Each team conducted a review of all of the standards in a family, though they focused primarily on those standards and requirements that had not been substantively revised since becoming enforceable. By reviewing the entire family, the team was in a better position to identify opportunities to improve consistency and consolidate requirements, and they were more likely to find other improvements to transition the standards to steady-state. Once each team completes its review and incorporates feedback from stakeholder comments, recommendations are delivered to the Standards Committee to be implemented through a formal standards project.

Current Projects in this Family

This section provides a brief synopsis of standards projects assigned to each Reliability Standard family. Within this document, the project number is a clickable hyperlink to the project page for that project on the NERC webpage if one exists. In some cases, a project number has been assigned, but a project has not yet begun; in those cases, the project number is not clickable.

RISC Input

The RISC is an advisory committee that reports directly to the NERC Board of Trustees.[14] With the assistance of NERC staff, RISC identified general categories of risk to reliability and ranked them as high, medium, or low. Within this appendix, the intention of applying RISC's rankings is not to assign a specific risk rank on a Reliability Standard basis, but to capture the general risk the Reliability Standard family addresses. On August 7, 2013, RISC endorsed the manner in which this document incorporates the RISC guidance.

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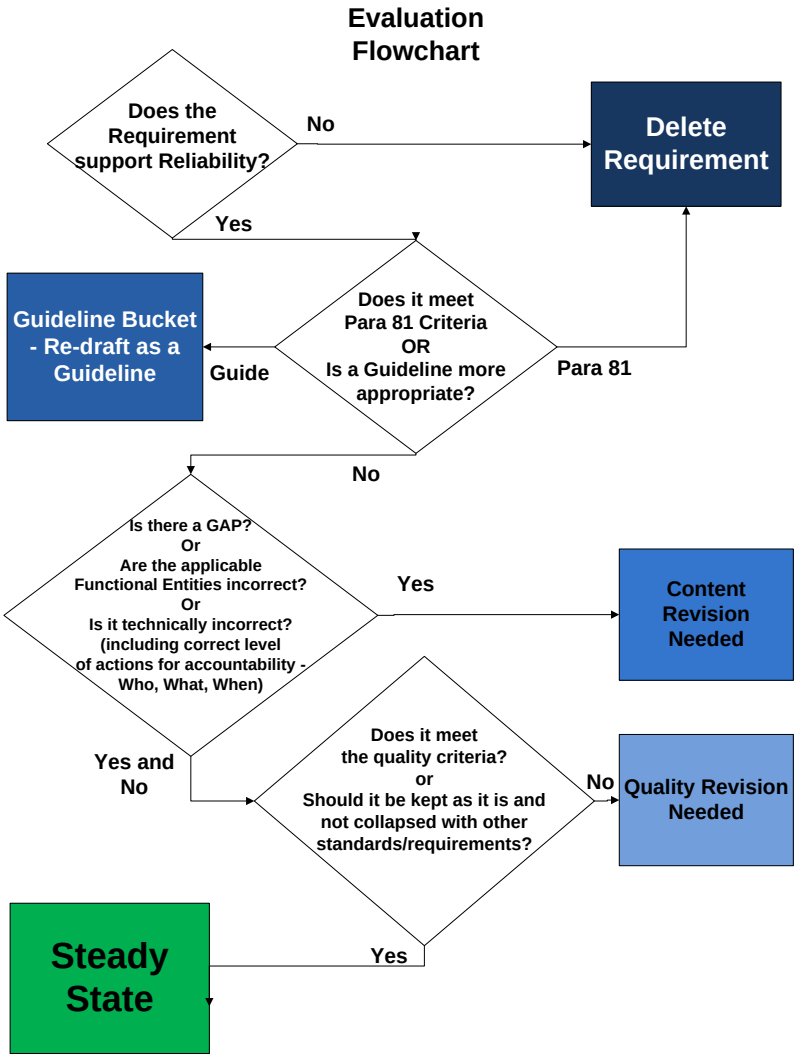
[13] On June 26, 2013, FERC approved revisions to the Standard Processes Manual that include changing the required period during which approved standards must be reviewed. Previously, a standard was required to be reviewed at least every five years; the new process extends the periodic review to at least once every 10 years. Where a review began prior to the Standard Processes Manual revisions, it is often referenced as a "five-year review"; otherwise such reviews are characterized more generally as a "periodic review."

[14] For more information regarding RISC: http://www.nerc.com/comm/RISC/Pages/default.aspx

Independent Experts Review

NERC retained five industry experts to independently review the NERC Reliability Standards to facilitate the transformation to a set of steady-state Reliability Standards. Their full final report is published on the NERC website.[15] The primary scope of the IERP was an assessment of the content and quality of the non-Critical Infrastructure Protection Reliability Standards. The IERP established an assessment process to develop recommendations for each requirement. The initial tests determined whether a requirement should be retired. The remaining requirements were given a content and quality grade. A reliability risk level was assigned, and the IERP recommended prioritization of future work based on their assignment of risk and grades. Key inputs from those assessments are provided in each Reliability Standard family snapshot. Given the nature and scope of the IERP effort, their input to the Reliability Standard families was more detailed than the RISC's input on a requirement-by-requirement basis, but both sources provided significant input into each Reliability Standard family assessment.

Figure 3: IERP Evaluation Steps



[15] http://www.nerc.com/pa/Stand/Standards%20Development%20Plan%20Library/Standards_Independent_Experts_Review_Project_Report.pdf.

The evaluations began with a review of each requirement to determine if it:

- does not support a Reliability Principle,
- meets the Para 81 criteria, or
- is better suited as a guideline.[16]

If the requirement met at least one of the above criteria, it was recommended for retirement by the IERP. The characterization of the "requirements recommended for deletion" in the snapshots does not necessarily mean the requirement should be retired or deleted without coordination, such as transitioning it to a guideline, consolidating it with other requirements, or other coordination to ensure that any reliability-relevant components of the requirement are not lost.

The IERP's findings on whether a requirement was steady-state or needed additional work were determined by applying the following content and quality criteria for a score from 0 to 3 on content and 0 to 12 on quality, with 0 being the lowest score for each attribute:

IERP Content Criteria

1. Is the content of the requirement technically correct, including identifying who does what and when?
2. Are the correct functional entities identified?
3. Are the appropriate actions for which there should be accountability included or is there a gap?

IERP Quality Criteria

1. Should the requirement stand alone as is or should it be consolidated with other standards?
2. Is it drafted as a results-based standard (RBS) requirement (performance, risk (prevention) or capability) and does it follow the RBS format (e.g., sub-requirement structure)?
3. Is it technologically neutral?
4. Are the expectations for each function clear?
5. Does the requirement align with the purpose?
6. Is it a higher solution than the lowest common denominator?
7. Is it measureable?
8. Does it have a technical basis in engineering and operations?

[16] The NERC technical committees develop guidelines. The processes for each are contained in each committee's charter. The Planning Committee's Report/Reliability Guideline Approval Process for approving guidelines is contained in Appendix 4 of its charter; the Operating Committee's Reliability Guidelines Approval Process is contained in Appendix 3 of its charter.

9. Is it complete and self-contained?

10. Is the language clear and free of ambiguous or outdated terms?

11. Can it be practically implemented?

12. Does it use consistent terminology?

The summary of these findings is included within each Reliability Standard family snapshot. Also, as part of the summary of the IERP's findings, there is a comparison of the Para 81 requirements identified by the IERP and stakeholders.

The IERP assessment separately addressed requirement types that are Enforceable in 2013[17] and Future Enforceable.[18] For purposes of the Reliability Standards data input into the RSDP, the representations of requirements are the forward-looking Future Enforceable set of standards.

The IERP also identified two levels of potential gaps in NERC Reliability Standards. The first level is at the requirement level, which is reflected in the content score for each requirement and included in the snapshots under the "needs work" column. The second level is a high-priority level, which identified seven potential reliability gaps. These gaps were presented to the RISC for review and recommendation of an appropriate solution. At the August 2013 NERC Board of Trustees meeting, the Board also issued a resolution to the Standards Committee to address both the gaps and retirements identified by the independent experts.

Remaining FERC Directives

Addressing outstanding regulatory directives continues to be a priority; therefore, regulatory directives are identified for each Reliability Standard family. This section summarizes remaining directives related to the Reliability Standard family and indicates whether it is assigned to a project. If a required timeline is associated with the directive, that timeline is also indicated.

[17] The Independent Experts defined Reliability Standards that are currently enforceable or will become enforceable in 2013 as the Enforceable in 2013 set of Reliability Standards.

[18] The Future Enforceable group of standards and requirements includes Enforceable in 2013 standards and those that have been approved by the Board or by FERC and are currently pending enforceability. Standards and requirements that will be replaced by the approved standards were not included in this group.

Reliability Standard Family: Resource and Demand Balancing (BAL)

The Reliable Operation of the interconnected power system requires that adequate generating capacity be available at all times to maintain scheduled frequency and avoid loss of firm load following loss of transmission or generation contingencies. Operating Reserve (regulating, contingency, and frequency responsive) is a critical component to the Reliable Operation of the Bulk-Power System (BPS), particularly during disturbances and restoration. The use of these reserves will ensure an interconnection's ability to maintain steady-state frequency within defined limits.

Status of Standards (as of 10/10/2013)*	
Mandatory Standards Subject to Enforcement	BAL-001-0.1a, BAL-002-1, BAL-003-0.1b, BAL-004-0, BAL-004-WECC-01, BAL-005-0.2b, BAL-006-2, BAL-502-RFC-02, BAL-STD-002-0
Standards Subject to Future Enforcement	None
Standards Filed and Pending Regulatory Approval	BAL-001-1, BAL-001-TRE-1, BAL-002-1a, BAL-002-WECC-2, BAL-003-1, BAL-004-WECC-02
Standards Pending Regulatory Filing	BAL-001-2
**Because of Canadian provincial differences in approving NERC Reliability Standards, the numbers in this chart represent the status according to FERC approval, and the numbers may vary slightly in other jurisdictions.*	

Periodic Review Status

On September 19, 2013, the Standards Committee appointed a periodic review team to review three BAL standards (BAL-004-0, BAL-005-0.2b, and BAL-006-2) to assess how best to scope a project to address outstanding Order 693 directives, as well as Para 81 recommendations.

Projects in this Family

Project 2010-14.1 – *Reliability Coordination* – BAL-001, BAL-002
Status: Under development

Project 2010-14.2 - *Periodic Review of BAL-004, BAL-005, and BAL-006*
Status: Review in progress

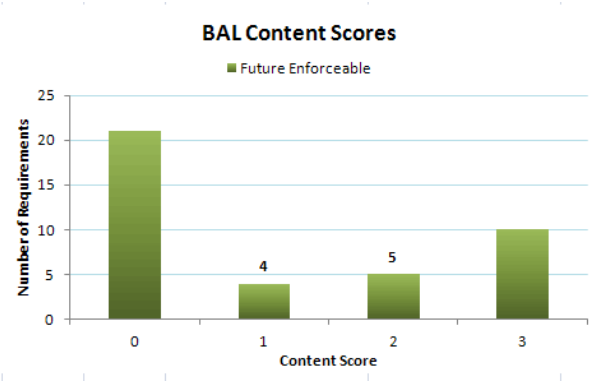
Relevant RISC Input

The BAL family of standards generally addresses balancing generation and load. RISC characterizes "Monitoring and Situational Awareness" as a high priority issue and "Generator Availability" and "Generation Resource Adequacy" as low-priority issues.

Independent Experts Review

The graphs below represent all of the requirements within the BAL family as scored by the IERP. Content Scores from 0 to 3 represent the technical basis of a requirement. Quality Scores from 0 to 12 represent how well a requirement is written.

Number of Requirements identified as steady-state (Content 3, Quality 11 or 12): 5/40
Requirements recommended for deletion: 21/40
High-Risk Standards Requiring Improvement: BAL-002-1a



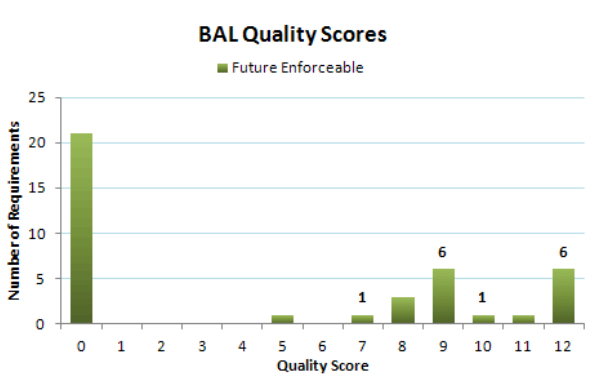


Table: BAL Family of Standards Trial Chart

		Needs Work		Steady State			Para 81	
Standard	Recommended for Retirement	Content 0, 1 or 2	Content 3, Quality ≤10	Content 3, Quality >10	RISC Rating	Independent Experts' Risk Rating	Candidate	Experts Agreement
BAL-001-1*	R3, R4		R1, R2		Medium	1 Med, 1 High, 2 N/A		
BAL-002-1a	R5	R1, R2, R4, R6		R3	Medium	5 High, 1 N/A		
BAL-003-1		R1	R4	R2, R3	Medium	3 Med, 1 High		
BAL-004-0	R1, R2, R3, R4				Not Ranked	N/A	R1, R2, R3, R4	Yes - all
BAL-005-0.2b	R2, R3, R8, R9, R10, R11, R12, R13, R16	R5, R6, R14, R17	R7, R15	R1, R4	High	1 low, 6 Med, 1 High, 9 N/A	R1 R11	R1 - No, R11 - Yes
BAL-006-2	R1, R2, R3, R4, R5				Not Ranked	N/A	R1, R2, R3, R4, R5	Yes - all

*BAL-001-2 was BOT adopted on August 15, 2013.

Directives

Directives Assigned to Projects

Total: 18

Project 2010-14.1: 4

Order 693:

- Para 315 - file a modification of the ERCOT regional difference to include the requirements concerning frequency response contained in section 5 of the ERCOT protocols.
- Para 330 - submit a modification to BAL-002-0 that includes a Requirement that explicitly provides that DSM may be used as a resource for contingency reserves, subject to the clarifications provided below.
- Para 354 - develop a modification to the Reliability Standard requiring that any single reportable disturbance that has a recovery time of 15 minutes or longer be reported as a violation of the Disturbance Control Standard.
- Para 355 - modify this Reliability Standard to define a significant deviation and a reportable event, taking into account all events that have an impact on frequency, e.g., loss of supply, loss of load and significant scheduling problems, which can cause frequency disturbances and to address how balancing authorities should respond.

Project 2010-14.2: 14

Order 693:

- Para 382 - develop a modification to BAL-004-0 through the Reliability Standards development process that includes Levels of Non- Compliance and additional Measures for Requirement R3. (Verifying whether this has been addressed in the VRF/VSL filing).
- Para 385 - perform research that would provide a technical basis for the present or any alternative approach that is more effective and helps reduce inadvertent interchange.
- Para 415 - the comments of Xcel and FirstEnergy should be addressed by the ERO when this Reliability Standard is revisited as part of the ERO's Work Plan.
- Para 406 - given that most of the commenters concerns over the inclusion of DSM as part of regulating reserves relate to the technical requirements, the Commission clarifies that to qualify as regulating reserves, these resources must be technically capable of providing the service. In particular, all resources providing regulation must be capable of automatically responding to real-time changes in load on an equivalent basis to the response of generation equipped with automatic generation control.
- Para 418 - require the ERO to modify the Reliability Standards to include a Measure that provides for a verification process over the minimum required automatic generation control or regulating reserves a balancing authority maintains.
- Para 419 - consider those (FirstEnergy) suggestions in its Reliability Standards development process.
- Para 428 - develop a modification to BAL-006-1 that adds Measures concerning the accumulation of large inadvertent imbalances and Levels of Non-Compliance.
- Para 438 - examine the WECC time error correction procedure as a possible guide. The Commission asks the ERO, when filing the new Reliability Standard, to explain how the new Reliability Standard satisfies the Commission's concerns.
- Para 444 - modify the regional differences so that they reference the current Reliability Standards and are in the standard form, which includes Requirements, Measures and Levels of Non-Compliance. The ERO should explore FirstEnergy's request to define the function of a waiver in its Reliability Standards development process.
- Para 1896 - require the ERO to submit a modification to the glossary that updates the definition of "operating reserves," as required in our discussion of BAL-002-0 and BAL-005-0.
- Para 340 - submit a modification to BAL-002-0 to include a continent wide contingency reserve policy.
- Para 351 - address the concerns expressed by the Commission about having enough contingency reserves to respond to an event on the system in Requirement R3.1 and how such reserves are measured.
- Para 396 - modify BAL-005-0 through the Reliability Standards development process to 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 into or out of the balancing authority.
- Para 404 - develop a modification to BAL-005-0 through the Reliability Standards development process that changes the title of the Reliability Standard to be neutral as to the source of regulating reserves and allows the inclusion of technically qualified DSM and direct control load management as regulating reserves, subject to the clarifications provided in this section.

Directives Unassigned to Projects

Total: 0

Reliability Standard Family: Critical Infrastructure Protection (CIP)

The Critical Infrastructure Protection standards are in place to provide a cybersecurity framework for the identification and protection of Cyber Assets and systems to support the Reliable Operation of the BPS. These standards recognize the differing roles of each entity in the operation of the BES, the criticality and vulnerability of the assets needed to manage BPS reliability, and the risks to which they are exposed. Business and operational demands for managing and maintaining a reliable BPS increasingly rely on Cyber Assets to support critical reliability functions and processes to communicate with each other, across functions and organizations, for services and data. This results in increased risks to these Cyber Assets.

Status of Standards (as of 10/10/2013)*	
Mandatory Standards Subject to Enforcement	CIP-001-2a, CIP-002-3, CIP-003-3, CIP-004-3a, CIP-005-3a, CIP-006-3c, CIP-007-3a, CIP-008-3, CIP-009-3
Standards Subject to Future Enforcement	CIP-002-4, CIP-003-4, CIP-004-4a, CIP-005-4a, CIP-006-4c, CIP-007-4a, CIP-008-4, CIP-009-4
Standards Filed and Pending Regulatory Approval	CIP-002-5, CIP-003-5, CIP-004-5, CIP-005-5, CIP-006-5, CIP-007-5, CIP-008-5, CIP-009-5, CIP-010-1, CIP-011-1
Standards Pending Regulatory Filing	CIP-002-3b
**Because of Canadian provincial differences in approving NERC Reliability Standards, the numbers in this chart represent the status according to FERC approval, and the numbers may vary slightly in other jurisdictions.*	

Periodic Review Status

No periodic review is being conducted on the CIP standards as they are all contained within a recently concluded project assignment.

Projects in this Family

None.

Relevant RISC Input

The CIP family of standards generally relates to cyber attack; RISC characterizes “Cyber Attack” as a high-priority issue.

Independent Experts Review

The independent experts did not review the CIP standards.

Directives

Directives Assigned to Projects

Total: 0

Directives Unassigned to Projects

Total: 0

Reliability Standard Family: Communications (COM)

The Communications standards are in place to establish interpersonal communication capabilities that are necessary to maintain reliability.

Status of Standards (as of 10/10/2013)*	
Mandatory Standards Subject to Enforcement	COM-001-1.1, COM-002-2
Standards Subject to Future Enforcement	None
Standards Filed and Pending Regulatory Approval	None
Standards Pending Regulatory Filing	COM-001-2, COM-002-2a, COM-002-3
**Because of Canadian provincial differences in approving NERC Reliability Standards, the numbers in this chart represent the status according to FERC approval, and the numbers may vary slightly in other jurisdictions.*	

Periodic Review Status

No periodic review is being conducted on the COM standards because they are all contained within a project assignment.

Projects in this Family

Project 2007-02 – *Operating Personnel Communications* – COM-003
Status: In drafting

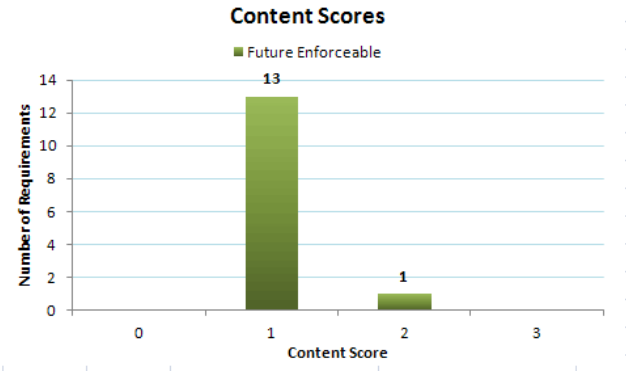
Relevant RISC Input

The COM family of standards addresses situational awareness. RISC characterizes "Monitoring and Situational Awareness" as a high-priority issue.

Independent Experts Review

The graphs below represent all of the requirements within the COM family as scored by the IERP. Content Scores from 0 to 3 represent the technical basis of a requirement. Quality Scores from 0 to 12 represent how well a requirement is written.

Number of Requirements identified as steady-state (Content 3, Quality 11 or 12): 0/14
Requirements recommended for deletion: 0/14
High-Risk Standards Requiring Improvement: COM-001, COM-002



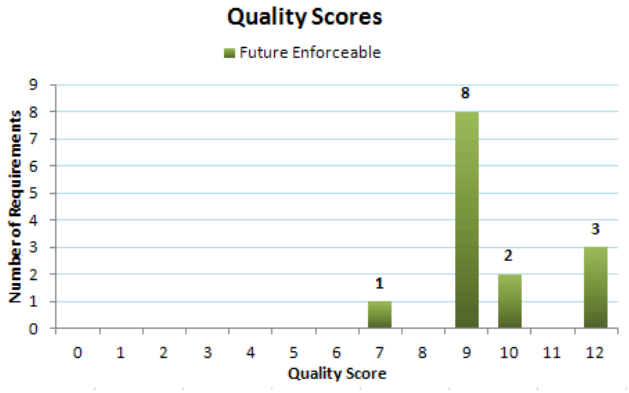


Table: COM Family of Standards Trial Chart								
		Needs Work		Steady State			Para 81	
Standard	Recommended for Retirement	Content 0, 1 or 2	Content 3, Quality ≤10	Content 3, Quality >10	RISC Rating	Independent Experts' Risk Rating	Candidate	Experts Agreement
COM-001-2		R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11			High	3 Med, 8 High		
COM-002-3		R1, R2, R3			High	3 High		

Directives

Directives Assigned to Projects

Total: 12

Project 2006-06: 11

Order 693:

- Para 493 - modify COM-001-1 to apply to generator operators and distribution providers.
- Para 491 - address TAPS, Entergy, Six Cities, and FirstEnergy concerns through the standard development process.
- Para 503 - 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.
- Para 504 - address TAPS, Entergy, Six Cities, and FirstEnergy concerns through the standard development process.
- Para 507 - determine whether it is the appropriate compliance monitor or if compliance should be monitored by the Regional Entities for NERCNet User Organizations.
- Para 512 - require the ERO to modify COM-002-2 to apply to distribution providers through its Reliability Standards development process.
- Para 515 - address APPAs concern through the standard development process.
- Para 523 - consider Xcel's suggestion that the entity taking operating actions should not be held responsible for the delays caused by the reliability coordinators assessment and approval.
- Para 531 - establish tightened communication protocols, especially for communications during alerts and emergencies and establish uniformity to the extent practical on a continent-wide basis.
- Para 539 - address Santa Clara, FirstEnergy, and Six Cities concerns in the reliability standards development process.

Order 749:

- Para 28 - close the gap in the applicability of the draft COM-001-2 so it addresses generation operators and distribution providers.

Project 2007-02: 1

Order 693:

- Para 533 - include communication protocols in the relevant Reliability Standard that governs those types of emergencies, we direct that it be addressed in the Reliability Standards Development process.

Directives Unassigned to Projects

Total: 0

Reliability Standard Family: Emergency Preparedness and Operations (EOP)

The Emergency Preparedness and Operations standards are in place for TOPs and BAs to develop, maintain, and implement a set of plans to mitigate operating emergencies. These plans need to be coordinated with other TOPs and BAs, as well as the Reliability Coordinator.

Status of Standards (as of 10/10/2013)*	
Mandatory Standards Subject to Enforcement	EOP-001-2.1b, EOP-002-3.1, EOP-003-2, EOP-004-1, EOP-005-2, EOP-006-2, EOP-008-1
Standards Subject to Future Enforcement	EOP-004-2
Standards Filed and Pending Regulatory Approval	None
Standards Pending Regulatory Filing	None
**Because of Canadian provincial differences in approving NERC Reliability Standards, the numbers in this chart represent the status according to FERC approval, and the numbers may vary slightly in other jurisdictions.*	

Periodic Review Status

On April 22, 2013, the Standards Committee Executive Committee appointed the 2009-03 EOP Five-Year Review Team (EOP FYRT) and tasked it with conducting a five-year review on the EOP standards to decide if revisions are needed in the scope of this project in relation to Para 81 and FERC directives. The team completed its review and delivered a set of recommendations to revise EOP-001, -002, and -003 to the Standards Committee in October 2013.

Projects in this Family[20]

Project 2009-03 – *Emergency Operations* – EOP-001-2b, EOP-002-3.1, EOP-004-2, EOP-005-2, EOP-006-2, EOP-008-1, IRO-001-5

Status: Review complete; SAR presented to Standards Committee on October 17, 2013

Relevant RISC Input

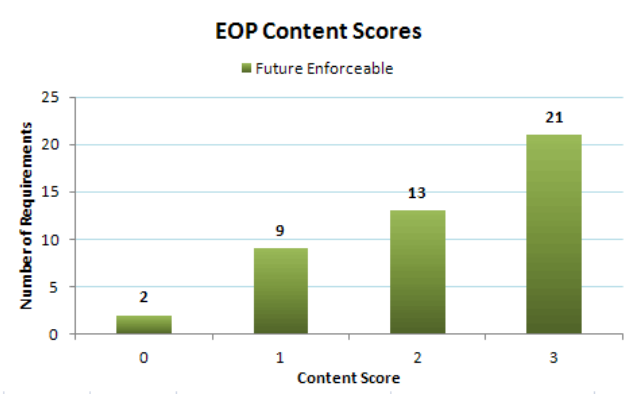
The EOP family of standards generally relates to emergency planning, and RISC characterizes "Coordinated Attack on Multiple Facilities" as a medium-priority issue.

Independent Experts Review

The graphs below represent all of the requirements within the EOP family as scored by the IERP. Content Scores represent the technical basis of a requirement and are scored from 0 to 3. Quality Scores represent how well a requirement is written and are scored from 0 to 12.

Number of Requirements identified as steady-state (Content 3, Quality 11 or 12): 16/62
Requirements recommended for deletion: 18/62
High-Risk Standards Requiring Improvement: EOP-006-2

[20] Project 2013-03 Geomagnetic Disturbance Mitigation, which is proposing as part of its stage 1 activities a new EOP-010-1 Reliability Standard, is discussed separately at the end of this appendix.



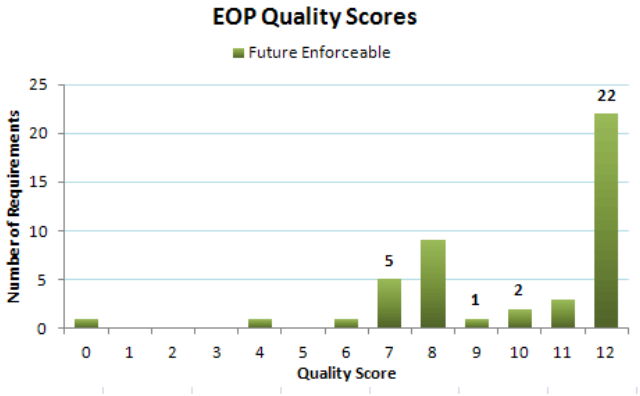


Table: EOP Family of Standards Trial Chart								
		Needs Work		Steady State			Para 81	
Standard	Recommended for Retirement	Content 0, 1 or 2	Content 3, Quality ≤10	Content 3, Quality >10	RISC Rating	Independent Experts' Risk Rating	Candidate	Experts Agreement
EOP-001-2.1b	R6	R2, R3, R4, R5	R1		High	4 Med, 1 High, 1 N/A	R1, R2, R3, R4, R5, R6	Only agree with R6
EOP-002-3.1	R2, R3, R6, R9	R4, R5, R7	R1	R8	Low	1 Low, 4 High, 4 N/A	R1, R6, R7, R9	Agree with R6, R9
EOP-003-2	R2, R4, R5, R6, R7	R3	R1, R8		Low	1 Med, 2 High, 5 N/A	R2, R3, R4, R5	Agree with R2, R4, R5
EOP-004-2	R3			R1, R2	High	1 Low, 1 Med, 1 N/A		
EOP-005-2	R7, R8, R12	R1, R3, R4, R14, R15, R16, R17	R10	R2, R5, R6, R9, R11, R13, R18	High	1 Low, 11 Med, 3 High, 3 N/A	R1	No
EOP-006-2	R7, R8, R9, R10	R1, R2, R3, R4, R5		R6	High	1 Low, 4 Med, 1 High, 4 N/A		
EOP-008-1		R5, R7, R8		R1, R2, R3, R4, R6		1 Low, 3 Med, 4 High	R5	No

Directives

Directives Assigned to Projects

Total: 10

Project 2009-03: 6

Order 693:

- Para 561 - determine the optimum number of continent-wide system states and their attributes and to modify the Reliability Standards through the Reliability Standards development process to accomplish this objective.
- Para 562 - direct the ERO to consider such a pilot program as it modifies EOP-001-0 through the Reliability Standards development process.
- Para 565 - clarifies that the actual emergency plan elements, and not for consideration elements of Attachment 1, should be the basis for compliance.
- Para 571 - 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.
- Para 573 - modify the Reliability Standard to include all technically feasible resource options in the management of emergencies.
- Para 595 - directs the ERO to address the minimum load and maximum time concerns of the Commission through the Reliability Standards development process.

- Para 597 – The Reliability Standard should require periodic drills by entities subject to section 215, and require those entities to seek participation by other entities. The drills should test the readiness and functionality of the load shedding plans, including, at times, the actual deployment of personnel.
- Para 601 – Consider comments from APPA in the standards development process.

Order 749:

- Para 24 - once the standard is effective, if industry determines that ambiguity with the term arises, it would be appropriate for NERC to consider its proposal to develop a guideline to aid entities in their compliance obligations.

Directives Unassigned to Projects

Total: 0

Reliability Standard Family: Facilities Design, Connections, and Maintenance (FAC)

The Facilities Design, Connections, and Maintenance standards are in place for facility connection requirements and transmission vegetation management programs and to establish system operating limits and interconnection reliability operating limits for both the planning and operations horizons. Those limits must also be communicated with other registered entities.

Status of Standards (as of 10/10/2013)*	
Mandatory Standards Subject to Enforcement	FAC-001-0, FAC-002-1, FAC-003-1, FAC-008-3, FAC-010-2.1, FAC-011-2, FAC-013-2, FAC-014-2, FAC-501-WECC-1
Standards Subject to Future Enforcement	FAC-001-1, FAC-003-2, FAC-003-3
Standards Filed and Pending Regulatory Approval	None
Standards Pending Regulatory Filing	None
**Because of Canadian provincial differences in approving NERC Reliability Standards, the numbers in this chart represent the status according to FERC approval, and the numbers may vary slightly in other jurisdictions.*	

Periodic Review Status

On April 22, 2013, the Standards Committee Executive Committee appointed the 2010-02 FAC Five-Year Review Team (FAC FYRT) and tasked it with conducting a five-year review on the FAC standards to decide if revisions are needed in the scope of this project in relation to Para 81 and FERC directives. The team completed its review and delivered a set of recommendations to the Standards Committee in October 2013.

Projects in this Family

Project 2010-02 – *Five-Year Review of FAC Standards* – FAC-001, FAC-002, FAC-003, FAC-008, FAC-010, FAC-011, FAC-013, FAC-014, FAC-501-WECC-1
Status: Review complete; SAR presented to Standards Committee on October 17, 2013

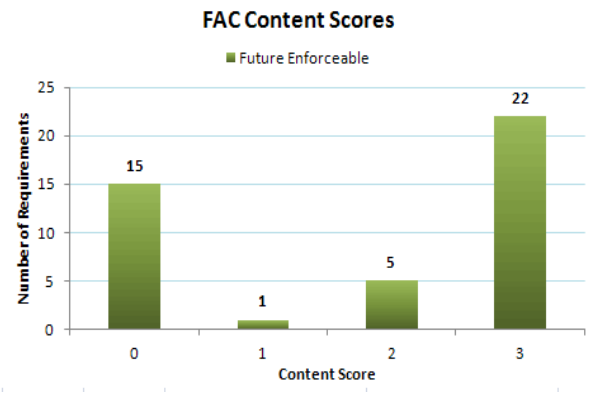
Relevant RISC Input

The FAC family of standards addresses facility design, ratings, and vegetation maintenance. RISC characterizes "Vegetation Management" and "Long-Term Planning and Modeling" as a low-priority issues.

Independent Experts Review

The graphs below represent all of the requirements within the FAC family as scored by the IERP. Content Scores from 0 to 3 represent the technical basis of a requirement. Quality Scores from 0 to 12 represent how well a requirement is written.

Number of Requirements identified as steady-state (Content 3, Quality 11 or 12): 10/43
Requirements recommended for deletion: 12/43
High-Risk Standards Requiring Improvement: None



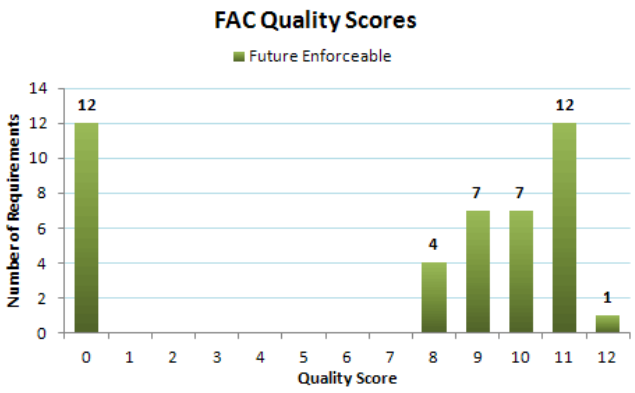


Table: FAC Family of Standards Trial Chart								
		Needs Work		Steady State			Para 81	
Standard	Recommended for Retirement	Content 0, 1 or 2	Content 3, Quality ≤10	Content 3, Quality >10	RISC Rating	Independent Experts' Risk Rating	Candidate	Experts Agreement
FAC-001-1	R4	R1, R2, R3			High	1 Low, 2 Med, 1 N/A	R1, R2, R3	No
FAC-002-1	R2		R1		Not Ranked	1 Med, 1 N/A	R1	No
FAC-003-3			R4, R5	R1, R2, R3, R6, R7	Low	7 High		
FAC-008-3	R4, R5	R7, R8	R1	R2, R3, R6	Low	2 Med, 4 High, 2 N/A	R4, R5	Yes
FAC-010-2.1	R3, R4, R5	R2	R1		Low	2 Med, 3 N/A	R5	Yes
FAC-011-2	R3, R4, R5		R1, R2		Low	2 Med, 3 N/A	R5	Yes
FAC-013-2	R2, R3		R1, R4, R5, R6		Low	2 Low, 2 Med, 2 N/A	R3, R5, R6	Only agree with R3
FAC-014-2		R2, R4, R6	R1	R3, R5	Med	2 Med, 4 High		

Directives

Directives Assigned to Projects

Total: 2

Project 2010-02

Order 693:

- Para 687 - address other commenters concerns in future revisions to the standard.
- Para 692 - consider FirstEnergy's suggestion to include a reference to TPL-004-0.

Directives Unassigned to Projects

Total: 1 (Issued March 13, 2013, FERC Order No. 777)

FAC-014

Order 777:

- Para 41, sentence 4 - However, we leave it to NERC to determine the most appropriate means for communicating IROL status to transmission owners.

Reliability Standard Family: Interchange Scheduling and Coordination (INT)

The Interchange Scheduling and Coordination standards are in place to ensure that Interchange information is submitted to the NERC identified reliability analysis service; to ensure Balancing Authorities confirm Interchange Schedules with Adjacent Balancing Authorities prior to implementing the schedules in their Area Control Error (ACE) equations; to ensure that the implementation of Interchange between Source and Sink BAs is distributed by an Interchange Authority such that Interchange information is available for reliability assessments; and to ensure that each Arranged Interchange is checked for reliability before it is implemented.

Status of Standards (as of 10/10/2013)*	
Mandatory Standards Subject to Enforcement	INT-001-3, INT-003-3, INT-004-2, INT-005-3, INT-006-3, INT-007-1, INT-008-3, INT-009-1, INT-010-1
Standards Subject to Future Enforcement	None
Standards Filed and Pending Regulatory Approval	None
Standards Pending Regulatory Filing	None
**Because of Canadian provincial differences in approving NERC Reliability Standards, the numbers in this chart represent the status according to FERC approval, and the numbers may vary slightly in other jurisdictions.*	

Periodic Review Status

No periodic review is being conducted on the INT standards, because they are all contained within a project assignment.

Projects in this Family

Project 2008-12 – *Reliability Coordination* – INT-001, INT-004, INT-005, INT-006, INT-008, INT-009, INT-010
Status: Under development

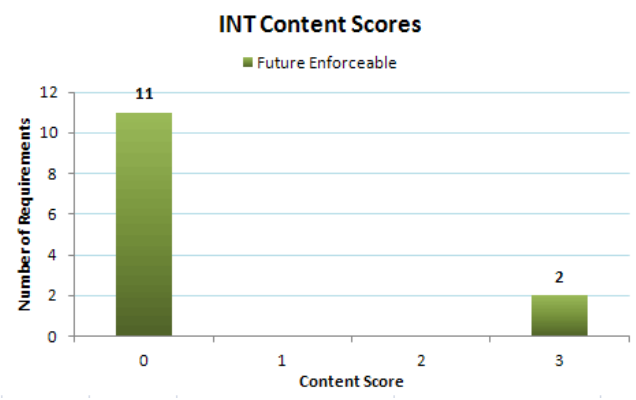
Relevant RISC Input

The INT family of standards generally relates to coordinating and scheduling interchange, and RISC characterizes "Operational Modeling and Model Inputs" as a medium-priority issue.

Independent Experts Review

The graphs below represent all of the requirements within the INT family as scored by the IERP. Content Scores from 0 to 3 represent the technical basis of a requirement. Quality Scores from 0 to 12 represent how well a requirement is written.

Number of Requirements identified as steady-state (Content 3, Quality 11 or 12): 0/13
Requirements recommended for deletion: 11/13
High-Risk Standards Requiring Improvement: None



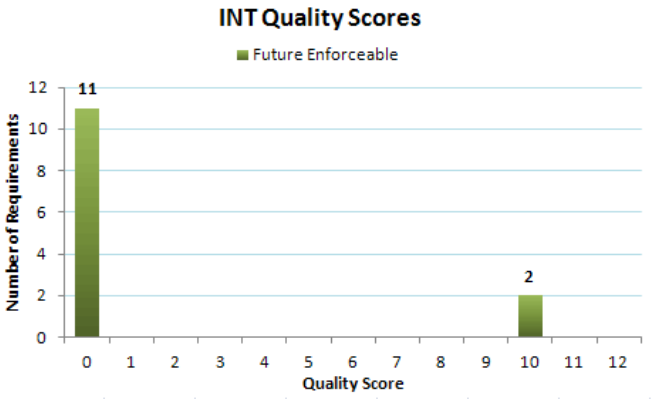


Table: INT Family of Standards Trial Chart

		Needs Work		Steady State			Para 81	
Standard	Recommended for Retirement	Content 0, 1 or 2	Content 3, Quality ≤10	Content 3, Quality >10	RISC Rating	Independent Experts' Risk Rating	Candidate	Experts Agreement
INT-001-3	R2		R1		Medium	1 High, 1 N/A	R1, R2	R1 - No, R2 - Yes
INT-003-3			R1		Medium	1 High	R1	No
INT-004-2	R1, R2				Medium	2 N/A	R1, R2	Yes
INT-005-3	R1				Medium	1 N/A	R1	Yes
INT-006-3	R1				Medium	1 N/A	R1	Yes
INT-007-1	R1				Medium	1 N/A	R1	Yes
INT-008-3	R1				Medium	1 N/A	R1	Yes
INT-009-1	R1				Medium	1 N/A	R1	Yes
INT-010-1	R1, R2, R3				Medium	3 N/A	R1, R2, R3	Yes

Directives

Directives Assigned to Projects

Total: 10

Project 2008-12: 10

Order 693:

- Para 817 - 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.
- Para 819 - direct the ERO to consider Santa Clara's comments, and whether some more explicit language would be useful, in the course of modifying INT-001-2 through the Reliability Standards development process.
- Para 843 - consider adding these Measures and Levels of Non-Compliance to the Reliability Standard.
- Para 848 - consider adding these Measures and Levels of Non-Compliance to the Reliability Standard.
- Para 866 – develop a modification to INT-006-1 through the Reliability Standards development process that makes it applicable to reliability coordinators and transmission operators.
- Para 866 - develop a modification to INT-006-1 through the Reliability Standards development process that requires 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.
- Para 866 - consider the suggestions made by EEI and TVA and address the questions raised by Entergy and Northern Indiana in the course of the Reliability Standards development process.

- Para 872 – consider APPAs suggestion to clarify what reliability entity the standard applies as part of the standard development process.
- Para 875 – consider APPAs suggestion to clarify what reliability entity the standard applies as part of the standard development process.
- Para 887 - consider Northern Indiana's and ISO-NE's suggestions in the standards development process.

Directives Unassigned to Projects

Total: 0

Reliability Standard Family: Interconnection Reliability Operations and Coordination (IRO)

The Interconnection Reliability Operations and Coordination standards give Reliability Coordinators the authority, plans, and agreements to immediately direct reliability entities within their Reliability Coordinator areas to re-dispatch generation, reconfigure transmission, or reduce load to mitigate critical conditions to return the system to a reliable state. If a Reliability Coordinator delegates tasks to others, the Reliability Coordinator retains its responsibilities for complying with NERC and regional standards. Standards of conduct are necessary to ensure the Reliability Coordinator does not act in a manner that favors one market participant over another.

Status of Standards (as of 10/10/2013)*	
Mandatory Standards Subject to Enforcement	IRO-001-1.1, IRO-002-2, IRO-003-2, IRO-004-2, IRO-005-3.1a, IRO-006-5, IRO-006-EAST-1, IRO-006-TRE-1, IRO-006-WECC-1, IRO-008-1, IRO-009-1, IRO-010-1a, IRO-014-1, IRO-015-1, IRO-016-1
Standards Subject to Future Enforcement	None
Standards Filed and Pending Regulatory Approval	IRO-001-3, IRO-002-3, IRO-005-4, IRO-014-2
Standards Pending Regulatory Filing	IRO-006-WECC-2
**Because of Canadian provincial differences in approving NERC Reliability Standards, the numbers in this chart represent the status according to FERC approval, and the numbers may vary slightly in other jurisdictions.*	

Periodic Review Status

On April 22, 2013, the Standards Committee Executive Committee appointed the 2012-09 IRO Five-Year Review Team (FYRT) and tasked it with performing a five-year review on the IRO standards to decide if revisions are needed in the scope of this project in relation to Para 81 and FERC directives. The team completed its review and delivered a set of recommendations to the Standards Committee in October 2013.

Projects in this Family

Project 2006-06.2 – *Phase 2 of Reliability Coordination* – IRO-003
Status: Future project

Project 2009-02 – *Real-Time Reliability Monitoring and Analysis Capabilities* – TBD
Status: Informal Development

Project 2012-09 IRO Review – IRO-001-1.1, IRO-002-2, IRO-003-2, IRO-004-2, IRO-005-3.1a, IRO-006-5, IRO-006-EAST-1, IRO-006-TRE-1, IRO-006-WECC-1, IRO-008-1, IRO-009-1, IRO-010-1a, IRO-014-1, IRO-015-1, IRO-016-1
Status: Review complete; recommendations and SAR presented to Standards Committee on October 17, 2013

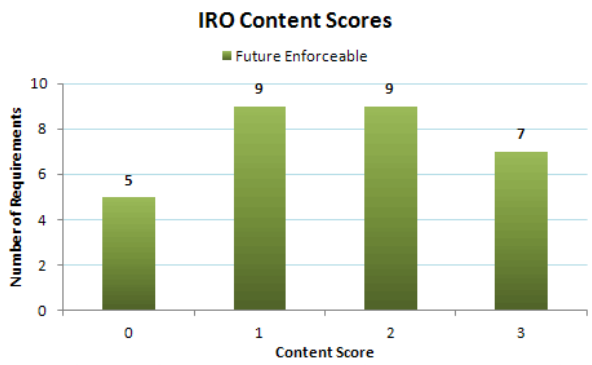
Relevant RISC Input

The IRO family of standards generally relates to situational awareness, and RISC characterizes “Monitoring and Situational Awareness” as a high-priority issue.

Independent Experts Review

The graphs below represent all of the requirements within the IRO family as scored by the independent experts’ review. Content Scores from 0 to 3 represent the technical basis of a requirement. Quality Scores from 0 to 12 represent how well a requirement is written.

Number of Requirements identified as steady-state (Content 3, Quality 11 or 12): 4/30
Requirements recommended for retirement/transition to guideline: 5/30
High-Risk Standards Requiring Improvement: IRO-001-3, IRO-005-4, IRO-008-1, and IRO-009-1



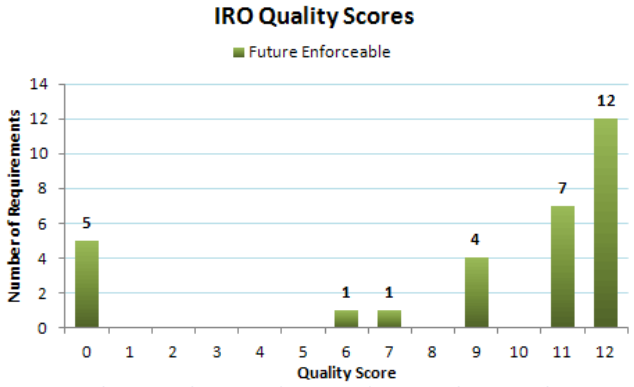


Table: IRO Family of Standards Trial Chart

		Needs Work		Steady State			Para 81	
Standard	Recommended for Retirement	Content 0, 1 or 2	Content 3, Quality ≤10	Content 3, Quality >10	RISC Rating	Independent Experts' Risk Rating	Candidate	Experts Agreement
IRO-001-3		R1, R3	R2		High	High		
IRO-002-3		R1, R2			High	High		
IRO-003-2			R1, R2		High	High		
IRO-004-2	R1				High	N/A	R1	Yes
IRO-005-4		R1, R2			High	High, Medium		
IRO-006-5					High	Medium		
IRO-008-1		R1, R2, R3			High	High		
IRO-009-1		R1, R2, R3, R4, R5			High	High		
IRO-010-1a		R1			High	2 Low, 1 High	R3	No
IRO-014-2	R2, R4, R7, R8	R1, R3, R5			High	2 Med, 2 High, 2 N/A	R2	Yes
IRO-015-1	R1, R2				High	2 N/A		
IRO-016-1	R1				High	N/A		

Directives

Directives Assigned to Projects

Total: 2

Project 2012-09: 2

Order 693:

- Para 914 - develop a modification to the Reliability Standard through the Reliability Standards development process to create criteria to define the term "critical facilities" in a reliability coordinator's area and its adjacent systems.
- Para 914 - consider the suggestions of APPA, Entergy, and Xcel when doing so.

Directives Unassigned to Projects

Total: 0

Reliability Standard Family: Modeling, Data, and Analysis (MOD)

The Modeling, Data, and Analysis standards ensure the accuracy of the calculations that feed into modeling, data, and the analysis of system planning and operations. Several of the MOD standards are in place to ensure that calculations are performed by Transmission Service Providers to maintain awareness of available transmission system capability and future flows on their own systems as well as those of their neighbors. Other standards deal with the steady-state and dynamics data for modeling and simulation of the interconnected transmission system. These standards also deal with demand data.

Status of Standards (as of 10/10/2013)*	
Mandatory Standards Subject to Enforcement	MOD-001-1a, MOD-004-1, MOD-008-1, MOD-010-0, MOD-012-0, MOD-016-1.1, MOD-017-0.1, MOD-018-0, MOD-019-0.1, MOD-020-0, MOD-021-1, MOD-028-2, MOD-029-1a, MOD-030-2
Standards Subject to Future Enforcement	None
Standards Filed and Pending Regulatory Approval	MOD-011-0, MOD-013-1, MOD-014-0, MOD-015-0, MOD-024-1, MOD-025-1, MOD-025-2, MOD-026-1, MOD-027-1
Standards Pending Regulatory Filing	MOD-015-0.1
**Because of Canadian provincial differences in approving NERC Reliability Standards, the numbers in this chart represent the status according to FERC approval, and the numbers may vary slightly in other jurisdictions.*	

Periodic Review Status

No periodic review is being conducted on the MOD standards because they are all contained within a project assignment.

Projects in this Family

Project 2010-03 – *Modeling Data* – MOD-010, MOD-011, MOD-012, MOD-013, MOD-014, MOD-015
Status: Under development

Project 2010-04 – *Demand Data* – MOD-016, MOD-017, MOD-018, MOD-019, MOD-020, MOD-021
Status: Under development

Project 2012-05 – *ATC Revisions* – MOD-001, MOD-004, MOD-008, MOD-028, MOD-029, MOD-030
Status: Under development

Relevant RISC Input

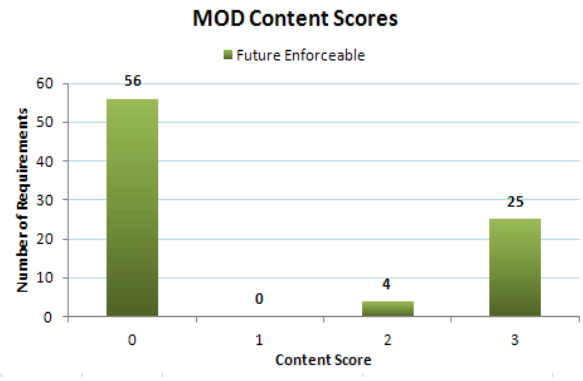
The MOD family of standards generally relates to modeling data and methods, and RISC characterizes "Operational Modeling and Model Inputs" as a medium-priority issue.

Independent Experts Review

The graphs below represent all of the requirements within the MOD family as scored by the independent experts' review. Content Scores from 0 to 3 represent the technical basis of a requirement. Quality Scores from 0 to 12 represent how well a requirement is written.

Number of Requirements identified as steady-state (Content 3, Quality 11 or 12): 11/85
Requirements recommended for deletion: 55/85

High-Risk Standards Requiring Improvement: None



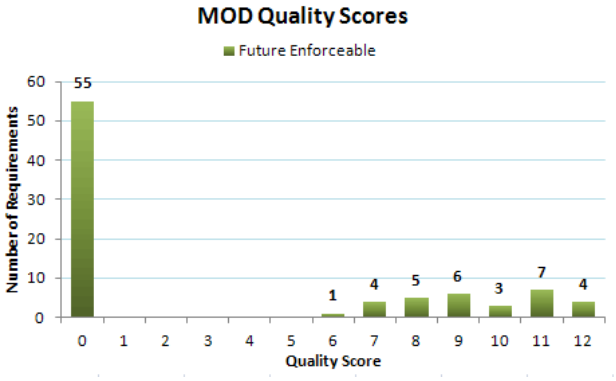


Table: MOD Family of Standards Trial Chart

		Needs Work		Steady State			Para 81	
Standard	Recommended for Retirement	Content 0, 1 or 2	Content 3, Quality ≤10	Content 3, Quality >10	RISC Rating	Independent Experts' Risk Rating	Candidate	Experts Agreement
MOD-001-1a	R1, R2, R3, R4, R5, R6, R7, R8, R9				Not Ranked	9 N/A	R1, R2, R3, R4, R5, R6, R7, R8, R9	Yes
MOD-004-1	R2, R7, R8, R9		R3, R4, R6, R10, R11, R12	R1, R5	Not Ranked	4 Low, 4 Med, 4 N/A	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11	Agreed with R2, R7, R8, R9
MOD-008-1	R3, R5		R2, R4	R1	Not Ranked	1 Low, 2 Med, 2 N/A	R1, R2, R3, R4, R5	Agreed with R3, R5
MOD-010-0		R1, R2			Medium	2 Med	R2	No
MOD-012-0		R1, R2			Medium	2 Med	R2	No
MOD-016-1.1	R1, R2, R3				Medium	3 N/A	R1, R2, R3	Yes
MOD-017-0.1	R1				Medium	1 N/A	R1	Yes
MOD-018-0	R1, R2				Medium	2 N/A	R1, R2	Yes
MOD-019-0.1	R1				Medium	1 N/A	R1	Yes
MOD-020-0		R1			Medium	1 Med	R1	No
MOD-021-1	R1, R2, R3				Medium	3 N/A	R1, R2, R3	Yes
MOD-025-2				R1, R2, R3	Not Ranked	3 High		
MOD-026-1			R2, R3, R4	R1, R5, R6	Not Ranked	6 Med		
MOD-027-1			R2, R3, R4	R1, R5	Not Ranked	5 Med		
MOD-028-2	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11				Not Ranked	11 N/A		
MOD-029-1a	R1, R2, R3, R4, R5, R6, R7, R8				Not Ranked	8 N/A	R1, R2, R3, R4, R5, R6, R7, R8	Yes
MOD-030-2	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11				Not Ranked	11 N/A	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11	Yes

Directives

Directives Assigned to Projects

Total: 50

Project 2010-03: 16
Order 890: 1

- Para 290 - 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.

Order 693: 15

- Para 1148 - modify MOD-010-0 to require filing of all of the contingencies that are used in performing steady-state system operation and planning studies.
- Para 1152 - address confidentiality issues and modify the Reliability Standard as necessary through its Reliability Standards development process.
- Para 1154 - modify MOD-010-0 to include transmission operators as an applicable entity.
- Para 1155 - the planning authority should be included in this Reliability Standard because the planning authority is the entity responsible for the coordination and integration of transmission facilities and resource plans, as well as one of the entities responsible for the integrity and consistency of the data.
- Para 1162 - add the planning authority to the applicability section of this Reliability Standard.
- Para 1178 - modify MOD-012-0 by adding a new requirement to provide a list of the faults and disturbances used in performing dynamics system studies for system operation and planning.
- Para 1181 - address confidentiality issues and modify the standard as necessary through its Reliability Standards development process.
- Para 1183 - modify MOD-012-0 to require the transmission planner to provide fault and disturbance lists.
- Para 1197 - modify the Reliability Standard to permit entities to estimate dynamics data if they are unable to obtain unit specific data for any reason, not just for units constructed prior to 1990.
- Para 1197 - require that the results of these dynamics models be compared with actual disturbance data to verify the accuracy of the models.
- Para 1199 - expand the applicability section in MOD-013-1 to include planning authorities because they are the entities responsible for the coordination and integration of transmission facilities and resource plans.
- Para 1184 - add the planning authority to the list of applicable entities.
- Para 1210 - modify the Reliability Standard to include a requirement that the models be validated against actual system responses.
- Para 1211 - modify MOD-014-0 through the Reliability Standards development process to require that actual system events be simulated and if the model output is not within the accuracy required, the model shall be modified to achieve the necessary accuracy.
- Para 1220 - modify the standard to require actual system events be simulated and dynamics system model output be validated against actual system responses.

<u>Project 2010-04: 14</u>

Order 693:

- Para 1232 - add to its definition of DSM “any other entities” that undertake activities or programs to influence the amount or timing of electricity they use without violating other Reliability Standard Requirement.
- Para 1232 - modify MOD-016-1 and expand the applicability section to include the transmission planner, on the basis that under the NERC Functional Model the transmission planner is responsible for collecting system modeling data, including actual and forecast load, to evaluate transmission expansion plans.
- Para 1249 - modify the Reliability Standard to require reporting of temperature and humidity along with peak load because actual load must be weather normalized for meaningful comparison with forecasted values.

- Para 1250 - we agree, however, with APPA that certain types of load are not sensitive to temperature and humidity. We therefore find that the ERO should address Alcoa's concerns in its Reliability Standards development process.
- Para 1251 - modify the Reliability Standard to require reporting of the accuracy, error and bias of load forecasts compared to actual loads with due regard to temperature and humidity variations.
- Para 1252 - add a Requirement that addresses correcting forecasts based on prior inaccuracies, errors and bias.
- Para 1255 - expand the applicability of MOD-017 to include transmission planners.
- Para 1256 - consider MISOs concerns in the Reliability Standards development process.
- Para 1265 - regarding TAPSs concern that small entities should not be required to comply with MOD-018-0 because their forecasts are not significant for system reliability purposes, the Commission directs the ERO to address this matter in the Reliability Standards development process.
- Para 1276 - modify this standard to require reporting of the accuracy, error and bias of controllable load forecasts.
- Para 1277 - include APPAs proposal in the Reliability Standards development process to add a new requirement to MOD-019-0 that would oblige resource planners to analyze differences between actual and forecasted demands for the five years of actual controllable load and identify what corrective actions should be taken to improve controllable load forecasting for the 10-year planning horizon.
- Para 1287 - develop a modification to MOD-020-0 through the Reliability Standards development process to require reporting of the accuracy, error and bias of controllable load forecasts.
- Para 1298 - modify this Reliability Standard to allow resource planners to analyze the causes of differences between actual and forecasted demands, and to identify any corrective actions that should be taken to improve forecasted demand responses for future forecasts. Therefore, we adopt the NOPR proposal and direct the ERO to modify MOD-021-0 by adding a requirement for standardization of principles on reporting and validating DSM program information.
- Para 1298 - modify this Reliability Standard to allow resource planners to analyze the causes of differences between actual and forecasted demands, and to identify any corrective actions that should be taken to improve forecasted demand responses for future forecasts. Therefore, we adopt the NOPR proposal and direct the ERO to modify MOD-021-0 by adding a requirement for standardization of principles on reporting and validating DSM program information.

Project 2012-05: 20
Order 729:

- Para 129 - modify the Reliability Standards so as to increase the document retention requirements to a term of five years, in order to be consistent with the enforcement provisions established in Order No. 670.
- Para 151 - develop a modification to the Reliability Standards pursuant to the EROs Reliability Standards development process to require disclosure of the various implementation documents to any registered entity who demonstrates to the ERO a reliability need for such information.
- Para 160 - consider generator nameplate ratings and transmission line ratings including the comments raised by Entegra and ISO/RTO Council
- Para 162 - develop benchmarking and updating requirements to measure modeled available transfer and flowgate capabilities against actual values.
- Para 173 - develop a modification to MOD-028-1 and MOD-029-1 to specify that base generation schedules used in the calculation of available transfer capability will reflect the modeling of all designated network resources and other resources that are committed to or have the legal obligation to run, as they are expected to run, and to address the effect on available transfer capability of designating and undesignating a network resource.

- Para 179 - consider Entegra's request regarding more frequent updates for constrained facilities through its Reliability Standards development process (see paragraph 177 of Order 729 for Entegra's comments).
- Para 179 - develop modifications to MOD-001-1 and MOD-030-2 to clarify that material changes in system conditions will trigger an update whenever practical (see also paragraph 23 of Order 729-A).
- Para 184 - develop modifications to MOD-001-1 pursuant to the EROs Reliability Standards development process to prevent the double-counting of data inputs and assumptions.
- Para 192 - develop a modification to the Reliability Standard pursuant to its Reliability Standards development process requiring transmission service providers to include in their implementation documents any inconsistent modeling practices along with a justification for such inconsistencies.
- Para 200 - encourage the ERO to consider Midwest ISOs and Entegra's comments when developing other modifications to the MOD Reliability Standards pursuant to the EROs Reliability Standards development procedure.
- Para 220 - develop a modification to Requirements R3.1 and R.4.1 of MOD-004-1 to require load-serving entities and resource planners to determine generation capability import requirements by reference to one or more relevant studies (loss of load expectation, loss of load probability or deterministic risk analysis) and applicable reserve margin or resource adequacy requirements, as relevant.
- Para 222 - modify MOD-004-1 to clarify the term manage in Requirement R1.3. This modification should ensure that the Reliability Standard clarify how the transmission service provider will manage situations where the requested use of capacity benefit margin exceeds the capacity benefit margin available.
- Para 231 - develop a modification sub-requirement R2.2 pursuant to its Reliability Standards development process to clarify the phrase adjacent and beyond Reliability Coordination areas.
- Para 234 - the Commission agrees that a graduated time frame for reposting could be reasonable in some situations. Accordingly, the ERO should consider this suggestion when making future modifications to the Reliability Standards.
- Para 237 - develop a modification to MOD-028-1 pursuant to its Reliability Standards development process to address these two concerns.
- Para 246 - consider Puget Sound's concerns on this issue when making future modifications to the Reliability Standards.
- Para 269 - make explicit such [effective date] detail in any future version of this or any other Reliability Standard.
- Para 304 - develop a modification to the definition of Postback to eliminate the reference to Business Practices.
- Para 305 - develop a modification to the definition of Business Practices that would remove the reference to regional reliability organizations and replace it with the term Regional Entity.
- Para 306 - develop a modification to the definition of ATC Path that does not reference the Commissions regulations.

Directives Unassigned to Projects

Total: 0

Reliability Standard Family: Nuclear Plant Interface Coordination (NUC)

The Nuclear Plant Interface Coordination standards are in place to require coordination between Nuclear Plant Generator Operators and Transmission Entities for the purpose of ensuring nuclear plant safe operation and shutdown.

Status of Standards (as of 10/10/2013)*	
Mandatory Standards Subject to Enforcement	NUC-001-2.1
Standards Subject to Future Enforcement	None
Standards Filed and Pending Regulatory Approval	None
Standards Pending Regulatory Filing	None
**Because of Canadian provincial differences in approving NERC Reliability Standards, the numbers in this chart represent the status according to FERC approval, and the numbers may vary slightly in other jurisdictions.*	

Periodic Review Status

On April 22, 2013, the Standards Committee Executive Committee appointed the 2010-02 NUC Five-Year Review Team to review the NUC standards to decide if revisions are needed in the scope of this project in relation to Para 81 and FERC directives. The team has concluded its review and the final recommendation to revise NUC-001, along with a SAR and redlined standard, were delivered to the Standards Committee in October 2013.

Projects in this Family

Project 2012-13 – *Nuclear Plant Interface Coordination* – NUC-001-2

Status: Review complete; SAR presented to Standards Committee on October 17, 2013

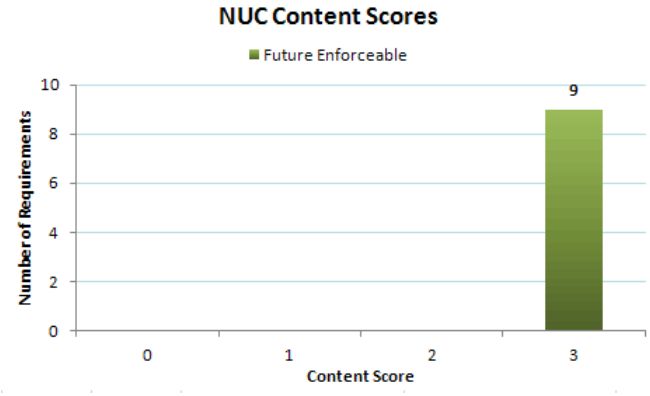
Relevant RISC Input

The NUC family of standards generally relates to coordinating and operations between Transmission Operators (TOPs) and Nuclear Operators, and RISC characterizes "Monitoring and Situational Awareness" as a high-priority issue.

Independent Experts Review

The graphs below represent all of the requirements within the NUC family as scored by the independent experts' review. Content Scores represent the technical basis of a requirement and are scored from 0 to 3. Quality Scores represent how well a requirement is written and are scored from 0 to 12.

Number of Requirements identified as steady-state (Content 3, Quality 11 or 12): 9/9
Requirements recommended for deletion: 0/9
High-Risk Standards Requiring Improvement: None



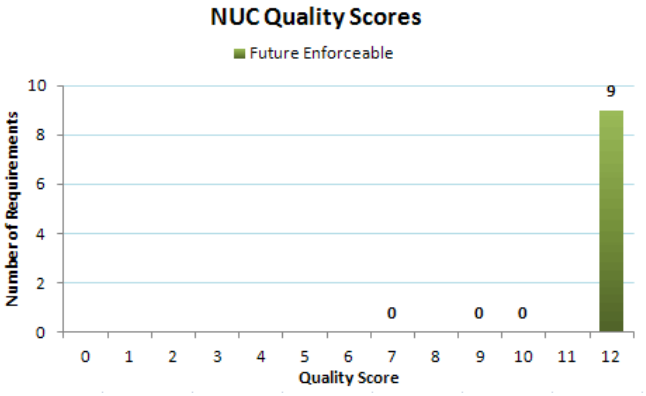


Table: NUC Family of Standards Trial Chart								
		Needs Work		Steady State			Para 81	
Standard	Recommended for Retirement	Content 0, 1 or 2	Content 3, Quality ≤10	Content 3, Quality >10	RISC Rating	Independent Experts' Risk Rating	Candidate	Experts Agreement
NUC-001-2				R1, R2, R3, R4, R5, R6, R7, R8, R9	High	9 High		

Directives

Directives Assigned to Projects

Total: 0

Directives Unassigned to Projects

Total: 0

Reliability Standard Family: Personnel Performance, Training, and Qualifications (PER)

The Personnel Performance, Training, and Qualifications standards ensure TOP and Balancing Authority (BA) operating personnel have the responsibility and authority to implement Real-time actions to ensure the stable and reliable operation of the BPS.

Status of Standards (as of 10/10/2013)*	
Mandatory Standards Subject to Enforcement	PER-001-0.2, PER-003-1, PER-004-2, PER-005-1
Standards Subject to Future Enforcement	None
Standards Filed and Pending Regulatory Approval	None
Standards Pending Regulatory Filing	None
**Because of Canadian provincial differences in approving NERC Reliability Standards, the numbers in this chart represent the status according to FERC approval, and the numbers may vary slightly in other jurisdictions.*	

Periodic Review Status

No periodic review is being conducted on the PER standards, because they are all contained within a project assignment.

Projects in this Family

Project 2010-01 – *System Operations Personnel* – PER-005-2

Status: Under development.

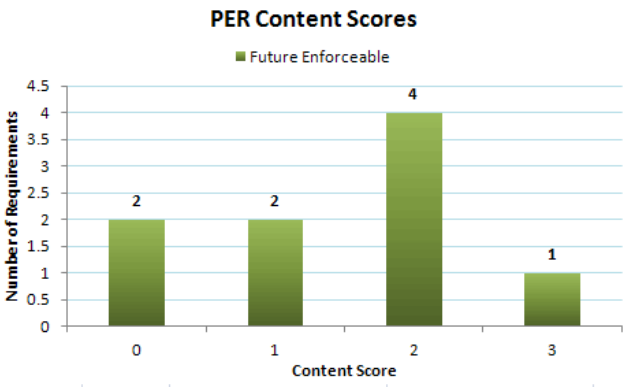
Relevant RISC Input

The PER family of standards generally relates to personnel training, and RISC characterizes "Workforce Capability and Human Error" as a high-priority issue.

Independent Experts Review

The graphs below represent all of the requirements within the PER family as scored by the independent experts' review. Content Scores represent the technical basis of a requirement and are scored from 0 to 3. Quality Scores represent how well a requirement is written and are scored from 0 to 12.

Number of Requirements identified as steady-state (Content 3, Quality 11 or 12): 1/9
Requirements recommended for deletion: 1/9
High-Risk Standards Requiring Improvement: None



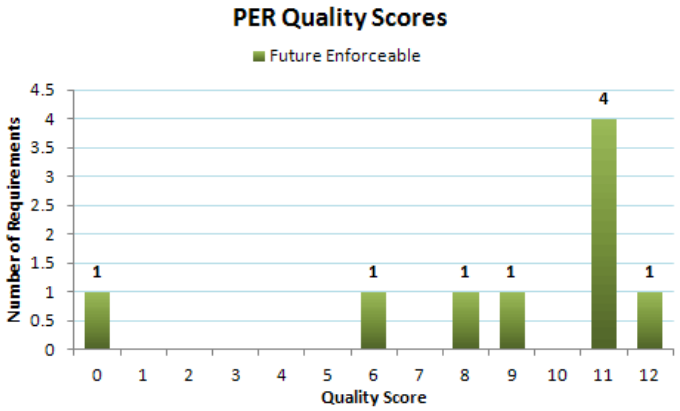


Table: PER Family of Standards Trial Chart								
		Needs Work		Steady State			Para 81	
Standard	Recommended for Retirement	Content 0, 1 or 2	Content 3, Quality ≤10	Content 3, Quality >10	RISC Rating	Independent Experts' Risk Rating	Candidate	Experts Agreement
PER-001-0.2		R1			High	1 High	R1	No
PER-003-1		R1, R2, R3			High	3 High		
PER-004-2	R2	R1			High	1 High, 1 N/A		
PER-005-1		R2, R3		R1	High	3 High		

Directives

Directives Assigned to Projects

Total: 7

Project 2010-01: 7

Order 693: 4

- Para 1372 - direct the ERO to develop a modification to PER-002-0 that extends applicability to the operations planning and operations support staff of transmission operators and balancing authorities.
- Para 1373 - direct the ERO to consider, through the Reliability Standards development process, whether personnel that perform these additional functions should be included in mandatory training pursuant to PER-002-0.
- Para 1375 - training programs for operations planning and operations support staff must be tailored to the needs of the function, the tasks performed and personnel involved.
- Para 1363 - direct the ERO to develop specific Requirements addressing the scope, content and duration appropriate for generator operator.

Order 742: 3

- Para 24 - with respect to the Critical Infrastructure Protection (CIP) Reliability Standards, NERC has developed a separate implementation plan that essentially gives responsible entities some lead time before newly acquired assets must be in compliance with the effective CIP Reliability Standards. We direct NERC to consider the necessity of developing a similar implementation plan with respect to PER-005-1, Requirement R3.1.
- Para 64 - direct the ERO to develop through a separate Reliability Standards development project formal training requirements for local transmission control center operator personnel.

- Para 64 - direct NERC to develop a definition of local transmission control center in the standards development project for developing the training requirements for local transmission control center operator personnel.

Directives Unassigned to Projects

Total: 0

Reliability Standard Family: Protection and Control (PRC)

The Protection and Control standards are in place to ensure system protection coordination among operating entities. The standards ensure that all transmission and generation Protection Systems affecting the reliability of the BES are maintained and tested. Undervoltage load shedding and underfrequency load shedding requirements are also covered, along with special protection systems misoperations, maintainence, and testing, and transmission relay loadability.

Status of Standards (as of 10/10/2013)*	
Mandatory Standards Subject to Enforcement	PRC-001-1.1, PRC-002-NPCC-01, PRC-004-2a, PRC-004-WECC-1, PRC-005-1b, PRC-006-1, PRC-008-0, PRC-010-0, PRC-011-0, PRC-015-0, PRC-016-0.1, PRC-017-0, PRC-018-1, PRC-021-1, PRC-022-1, PRC-023-1, PRC-023-2
Standards Subject to Future Enforcement	PRC-004-2.1a, PRC-005-1.1b, PRC-006-NPCC-1, PRC-006-SERC-01
Standards Filed and Pending Regulatory Approval	PRC-001-2, PRC-002-1, PRC-003-1, PRC-005-2, PRC-006-SPP-1, PRC-012-0, PRC-013-0, PRC-014-0, PRC-019-1, PRC-020-1, PRC-024-1, PRC-025-1
Standards Pending Regulatory Filing	None
**Because of Canadian provincial differences in approving NERC Reliability Standards, the numbers in this chart represent the status according to FERC approval, and the numbers may vary slightly in other jurisdictions.*	

Periodic Review Status

No periodic review is being conducted on the PRC standards, because they are all contained within a project assignment.

Projects in this Family

Project 2007-06 – *System Protection Coordination* – PRC-001, PRC-027
Status: Under development

Project 2007-11 – *Disturbance Monitoring* – PRC-002, PRC-018
Status: Under development

Project 2007-17.2 – *Protection System Maintenance and Testing – Phase 2 (Reclosing Relays)* – PRC-005
Status: Under development

Project 2008-02 – *Undervoltage Load Shedding* – PRC-010, PRC-022
Status: Under development

Project 2010-13.2 – *Phase 2 of Relay Loadability: Generation* – PRC-023, PRC-025
Status: Under development (PRC-025-1 has been filed with regulatory authorities).

Project 2010-13.3 – *Phase 3 of Relay Loadability Order 733: Stable Power Swings*
Status: The NERC System Protection and Control Subcommittee (SPCS) is developing the technical report that a standard drafting team will use

Project 2010-05.1 – *Protection System: Phase 1 (Misoperations)* – PRC-004
Status: Under development

Project 2010-05.2 – *Phase 2 of Protection Systems: SPS and RAS* – PRC-012, PRC-014
Status: Under development

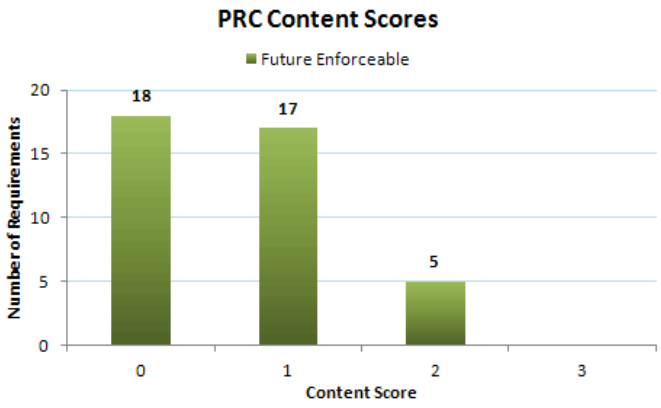
Relevant RISC Input

The PRC family of standards generally relates to testing, maintenance, and misoperations, and RISC characterizes "Protection Systems" as a high-priority issue and "Equipment Maintenance and Management" as a medium-priority issue.

Independent Experts Review

The graphs below represent all of the requirements within the PRC family as scored by the independent experts' review. Content Scores represent the technical basis of a requirement and are scored from 0 to 3. Quality Scores represent how well a requirement is written and are scored from 0 to 12.

Number of Requirements identified as steady-state (Content 3, Quality 11 or 12): 14/55
Requirements recommended for deletion: 12/55
High-Risk Standards Requiring Improvement: PRC-001-2, PRC-006-1, PRC-010-0, PRC-015-0, PRC-018-1, PRC-022-1



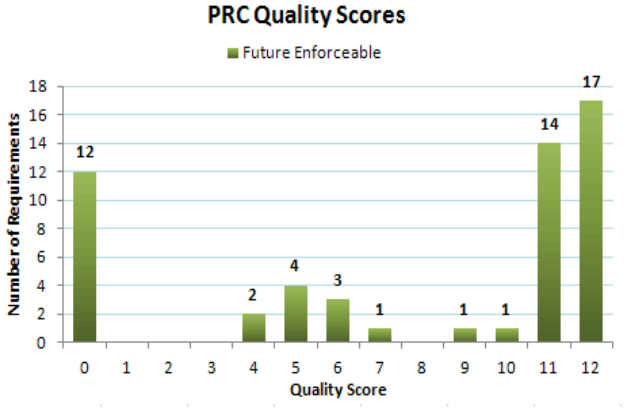


Table: PRC Family of Standards Trial Chart

		Needs Work		Steady State			Para 81	
Standard	Recommended for Retirement	Content 0, 1 or 2	Content 3, Quality ≤10	Content 3, Quality >10	RISC Rating	Independent Experts' Risk Rating	Candidate	Experts Agreement
PRC-001-2		R1, R2, R3			High	3 High		
PRC-004-2.1a	R3	R1, R2			High	2 High, 1 N/A	R3	Yes
PRC-005-2				R1, R2, R3, R4, R5	High	5 High		
PRC-006-1	R6, R10, R14	R1, R2, R3, R4, R5, R7, R8, R9, R11, R12, R13			Low	1 Low, 6 Med, 4 High, 3 N/A	R7, R8	No
PRC-010-0	R2	R1			Low	1 High, 1 N/A		
PRC-015-0	R3	R1, R2			High	1 Low, 1 High, 1 N/A	R3	Yes
PRC-016-0.1	R3		R1	R2	High	2 High, 1 N/A	R3	Yes
PRC-018-1	R3	R1, R2, R4, R5, R6			Not Ranked	1 Low, 1 Med, 3 High, 1 N/A	R3, R5	Yes only to R3
PRC-019-1				R1, R2	Not Ranked	2 High		
PRC-021-1	R1, R2				Not Ranked	2 N/A	R2	Yes
PRC-022-1	R2	R1			Not Ranked	1 High, 1 N/A	R1	No
PRC-023-2	R5	R4, R6		R1, R2, R3	High	1 Med, 4 High, 1 N/A	R3	No
PRC-024-1		R3		R1, R2, R4	Not Ranked	1 Med, 3 High		

Directives

Directives Assigned to Projects

Total: 14

Project 2007-06: 1

Order 693:

- Para 1446 - we agree with APPA that the added Measures and Levels of Non-Compliance incorrectly reference non-existent requirements. We direct the ERO to revise the references accordingly.

Project 2007-11: 1

Order 693:

- Para 1456 - consider APPA, Alcoa and Otter Tail's suggestions in the Reliability Standards development process as it modifies PRC-002-1 to provide missing information needed for the Commission to act on this Reliability Standard.

Project 2007-17.2: 1

Order 758:

- Para 27 - include maintenance and testing of reclosing relays that can affect the reliable operation of the Bulk-Power System within Project 2007-17 or make an informational filing that provides a schedule for how NERC will address such issues.

Project 2008-02: 4

Order 693:

- Para 1509 - develop a modification to PRC-010-0 through the Reliability Standards development process that requires 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 programs.
- Para 1524 - Consider APPAs suggestions for interconnection-wide consistency in the standards development process.
- Para 1566 - consider FirstEnergy's suggestion in the Reliability Standards development process.

Order 763:

- Para 48 - direct NERC to modify requirement R9 of PRC-006-1 to explicitly require corrective action in accordance with a schedule established by the planning coordinator.

Project 2010-13.2: 1

Order 733:

- Para 106 - develop the Reliability Standard addressing generator relay loadability as a new Standard, with its own individual timeline, and not as a revision to an existing Standard.

Project 2010-13.3: 3

Order 733:

- Para 153 - develop a Reliability Standard addressing undesirable relay operation due to stable power swings.
- Para 162 - consider islanding strategies that achieve the fundamental performance for all islands in developing the new Reliability Standard addressing stable power swings.
- Para 173 - develop a new Reliability Standard that prevents protective relays from operating unnecessarily due to stable power swings by requiring the use of protective relay systems that can differentiate between faults and stable power swings and, when necessary, phases-out relays that cannot meet this requirement.

Project 2010-05.1: 1

Order 693:

- Para 1461 - consider APPA's suggestions in the Reliability Standards development process as it modifies PRC-003-1 to provide missing information needed for the Commission to act on this Reliability Standard.

Project 2010-05.2: 2
Order 693:

- Para 1520 - consider APPAs suggestions for interconnection-wide consistency in the standards development process.
- Para 1528 - consider APPAs suggestions for interconnection-wide consistency in the standards development process.

Directives Unassigned to Projects

Total: 0

Reliability Standard Family: Transmission Operations (TOP)

The Transmission Operations standards are in place to ensure reliability entities have clear decision-making authority and capabilities to take appropriate actions or direct the actions of others to return the transmission system to normal conditions during an emergency.

Status of Standards (as of 10/10/2013)*	
Mandatory Standards Subject to Enforcement	TOP-001-1a, TOP-002-2.1b, TOP-003-1, TOP-004-2, TOP-005-2a, TOP-006-2, TOP-007-0, TOP-007-WECC-1, TOP-008-1
Standards Subject to Future Enforcement	None
Standards Filed and Pending Regulatory Approval	TOP-001-2, TOP-002-3, TOP-003-2, TOP-006-3
Standards Pending Regulatory Filing	None
**Because of Canadian provincial differences in approving NERC Reliability Standards, the numbers in this chart represent the status according to FERC approval, and the numbers may vary slightly in other jurisdictions.*	

Periodic Review Status

No periodic review is being conducted on the TOP standards, because they are all contained within a project assignment.

Projects in this Family

Project 2009-02 – *Real-Time Reliability Monitoring and Analysis Capabilities* – TOP-006

Status: Informal development

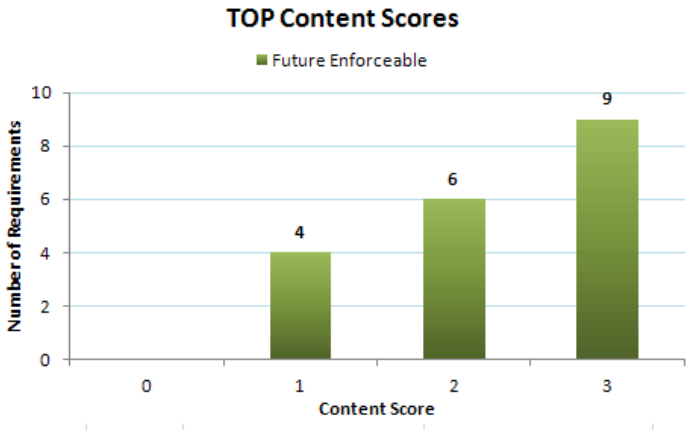
Relevant RISC Input

The TOP family of standards generally relates to situational awareness, and RISC characterizes "Monitoring and Situational Awareness" as a high-priority issue.

Independent Experts Review

The graphs below represent all of the requirements within the TOP family as scored by the independent experts' review. Content Scores represent the technical basis of a requirement and are scored from 0 to 3. Quality Scores represent how well a requirement is written and are scored from 0 to 12.

Number of Requirements identified as steady-state (Content 3, Quality 11 or 12): 8/19
Requirements recommended for deletion: 0/19
High-Risk Standards Requiring Improvement: TOP-001-2



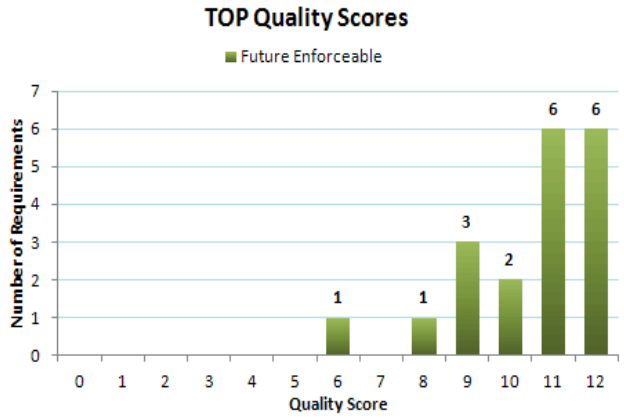


Table: TOP Family of Standards Trial Chart								
		Needs Work		Steady State			Para 81	
Standard	Recommended for Retirement	Content 0, 1 or 2	Content 3, Quality ≤10	Content 3, Quality >10	RISC Rating	Independent Experts' Risk Rating	Candidate	Experts Agreement
TOP-001-2		R1, R3, R4, R5 R6, R8, R11		R2, R7, R9, R10	High	1 Med, 10 High		
TOP-002-3		R1		R2	Medium	3 High		
TOP-003-2		R1, R2		R3, R4, R5	High	4 Low, 1 High		

Directives

Directives Assigned to Projects

Total: 25

Project 2007-03: 24

Order 693:

- Para 1588 - consider Santa Clara's comments on requirements R7.2 and R7.3 on transmission operator notification requirements as part of the standards development process.
- Para 1580 - provide Measures and Level of Non-Compliance for this Requirement
- Para 1585 - conclude that emergency states need to be defined and that criteria for entering these states and authority for declaring them need to be specified.
- Para 1601 - modify Reliability Standard TOP-002-2 to require the next-day analysis for all IROLs to identify and communicate control actions to system operators that can be implemented within 30 minutes following a contingency to return the system to a reliable operating state and prevent cascading outages.
- Para 1603 - require next-day analysis of minimum voltages at nuclear power plants auxiliary power buses.
- Para 1608 - require simulation contingencies to match what will actually happen in the field.
- Para 1607 - consider the comments of ISO-NE and the NRC with respect to requirement R12 and measure M7 as part of the standard development process.
- Para 1600 - address critical energy infrastructure confidentiality as part of the routine standard development process.
- Para 1603 - inform the nuclear plant operator in real-time if the auxiliary power bus voltages cannot be maintained.
- Para 1606 - ensure the necessary clarity, the term as used in Requirement R7 of TOP-002-2 should be understood in this manner.

- Para 1620 - develop a modification to TOP-003-0 that requires the communication of scheduled outages to all affected entities well in advance to ensure reliability and accuracy of ATC calculations.
- Para 1621 - modify the Reliability Standard to incorporate an appropriate lead time for planned outages.
- Para 1622 - consider TVAs suggestion for including breaker outages within the meaning of facilities that are subject to advance notice for planned outages.
- Para 1624 - modify the Reliability Standard to require that any facility below the thresholds that, in the opinion of the transmission operator, balancing authority, or reliability coordinator will have a direct impact on the reliability of the Bulk-Power System be subject to Requirement R1 for planned outage coordination.
- Para 1636 - develop a modification to Requirement R4 providing that the system should be restored to respect proven reliable power system limits as soon as possible and in no longer than 30 minutes.
- Para 1638 - develop a modification to the Reliability Standard that explicitly incorporates this interpretation with the details identified in the Reliability Standards development process.
- Para 1639 - consider Santa Clara's suggestion regarding changes to Requirement R2 in the Reliability Standards development process.
- Para 1637 - conduct a survey on the operating practices and actual experiences surrounding drifting in and out of IROL violations.
- Para 1648 - develop a modification to TOP-005-1 through the Reliability Standards development process regarding the operational status of special protection systems and power system stabilizers in Attachment 1.
- Para 1650 - consider FirstEnergy's modifications to Attachment 1 and ISO-NEs recommended revision to requirement R4 in the standards development process.
- Para 1663 - clarify the meaning of appropriate technical information concerning protective relays.
- Para 1664 - consider APPA's comment regarding the missing Measures in the ERO's Reliability Standards development process.
- Para 1673 - consider NRC's comments in the Reliability Standards development process when addressing TOP-007-0 as part of its Work Plan.
- Para 1681 - consider APPA's comment regarding the missing Measures in the ERO's Reliability Standards development process.

Project 2009-02: 1

Order 693:

- Para 1660 - 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.

Directives Unassigned to Projects

Total: 0

Reliability Standard Family: Transmission Planning (TPL)

The Transmission Planning standards are in place to address system performance under normal conditions, system performance following loss of a single BES Element, system performance following loss of two or more BES Elements, and system performance following extreme events resulting in the loss of two of more BES Elements.

Status of Standards (as of 10/10/2013)*	
Mandatory Standards Subject to Enforcement	TPL-001-0.1, TPL-002-0b, TPL-003-0b, TPL-004-0a
Standards Subject to Future Enforcement	None
Standards Filed and Pending Regulatory Approval	TPL-001-2, TPL-001-3, TPL-001-4, TPL-002-2b, TPL-003-2a, TPL-003-2b, TPL-004-2, TPL-004-2a, TPL-005-0, TPL-006-0
Standards Pending Regulatory Filing	TPL-006-0.1
**Because of Canadian provincial differences in approving NERC Reliability Standards, the numbers in this chart represent the status according to FERC approval, and the numbers may vary slightly in other jurisdictions.*	

Periodic Review Status

There is a not a five-year review being conducted on the TPL standards, because they are all contained within a project assignment.

Projects in this Family[21]

None.

Relevant RISC Input

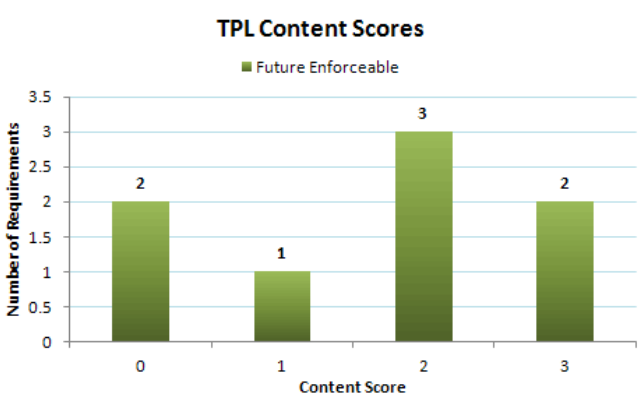
The TPL family of standards generally relates to long-term planning and modeling, and RISC characterizes "Long Term Planning and Modeling" as a low-priority issue.

Independent Experts Review

The graphs below represent all of the requirements within the TPL family as scored by the independent experts' review. Content Scores represent the technical basis of a requirement and are scored from 0 to 3. Quality Scores represent how well a requirement is written and are scored from 0 to 12.

Number of Requirements identified as steady-state (Content 3, Quality 11 or 12): 2/8
Requirements recommended for deletion: 2/8
High-Risk Standards Requiring Improvement: None

[21] Project 2013-03 Geomagnetic Disturbance Mitigation is discussed separately at the end of this appendix.



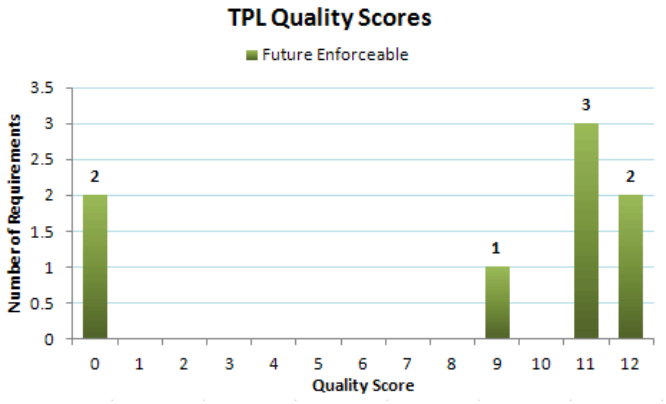


Table: TPL Family of Standards Trial Chart								
		Needs Work		Steady State			Para 81	
Standard	Recommended for Retirement	Content 0, 1 or 2	Content 3, Quality ≤10	Content 3, Quality >10	RISC Rating	Independent Experts' Risk Rating	Candidate	Experts Agreement
TPL-001-4	R1, R7	R2, R3, R4, R8		R5, R6	High	1 Low, 2 Med, 3 High, 2 N/A		

Directives

Directives Assigned to Projects

Total: 0

Directives Unassigned to Projects

Total: 0

Reliability Standard Family: Voltage and Reactive (VAR)

The Voltage and Reactive standards are in place to ensure that voltage levels, reactive flows, and reactive resources are monitored, controlled, and maintained within limits in Real-time to protect equipment and the reliable operation of the Interconnection.

Status of Standards (as of 10/10/2013)*	
Mandatory Standards Subject to Enforcement	VAR-001-2, VAR-002-2b, VAR-002-WECC-1, VAR-501-WECC-1
Standards Subject to Future Enforcement	VAR-001-3
Standards Filed and Pending Regulatory Approval	None
Standards Pending Regulatory Filing	None
**Because of Canadian provincial differences in approving NERC Reliability Standards, the numbers in this chart represent the status according to FERC approval, and the numbers may vary slightly in other jurisdictions.*	

Periodic Review Status

There is a not a five-year review being conducted on the VAR standards, because they are all contained within a project assignment.

Projects in this Family

Project 2013-04 – *Voltage and Reactive Control* – VAR-001-4, VAR-002-3

Status: Under development

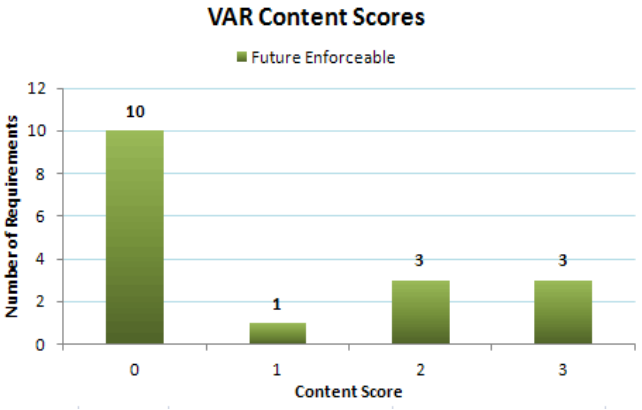
Relevant RISC Input

The VAR family of standards generally relates to reactive power resources and maintaining voltage, and RISC characterizes "Monitoring and Situational Awareness" as a high-priority issue.

Independent Experts Review

The graphs below represent all of the requirements within the VAR family as scored by the independent experts' review. Content Scores represent the technical basis of a requirement and are scored from 0 to 3. Quality Scores represent how well a requirement is written and are scored from 0 to 12.

Number of Requirements identified as steady-state (Content 3, Quality 11 or 12): 1/17
Requirements recommended for deletion: 10/17
High-Risk Standards Requiring Improvement: None



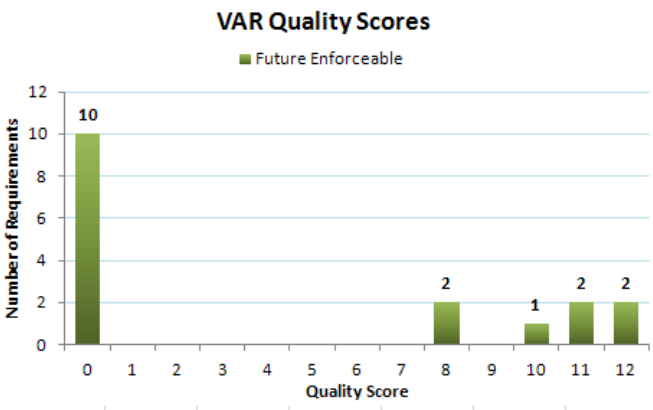


Table: VAR Family of Standards Trial Chart								
		Needs Work		Steady State			Para 81	
Standard	Recommended for Retirement	Content 0, 1 or 2	Content 3, Quality ≤10	Content 3, Quality >10	RISC Rating	Independent Experts' Risk Rating	Candidate	Experts Agreement
VAR-001-3	R5, R6, R7, R8, R9, R10, R11, R12	R2	R1, R3	R4	High	1 Low, 3 High, 8 N/A		
VAR-002-2b	R4, R5	R1, R2, R3			Not Ranked	3 Med, 2 N/a	R3	No

Directives

Directives Assigned to Projects

Total: 12

Project 2013-04: 10

Order 693: 9

- Para 1855 – modify VAR-001-1 to include reliability coordinators as applicable entities and include a new requirement(s) that identifies the reliability coordinator's monitoring responsibilities.
- Para 1862 – include APPAs comments regarding varying power factor requirements due to system conditions and equipment in the standards development process.
- Para 1868 – the NOPR proposed directing the ERO to modify VAR-001-1 to include more detailed and definitive requirements on "established limits" and "sufficient reactive resources" and identify acceptable margins (i.e. voltage and/or reactive power margins) above voltage instability points to prevent voltage instability and to ensure reliable operations. We will keep this direction, and direct the ERO to include this modification in this Reliability Standard.
- Para 1869 – we recognize that our proposed modification does not identify what definitive requirements the Reliability Standard should use for established limits and sufficient reactive resources. Rather, the ERO should develop appropriate requirements that address the Commission's concerns through the ERO Reliability Standards development process.
- Para 1869 – address the concerns of Dynegy, EEI, and MISO through the standards development process.
- Para 1875 – consider the available technologies and software as it develops this modification to VAR-001-1 and identify a process to assure that the Reliability Standard is not limiting the application of validated software or other tools.
- Para 1862 – direct the ERO to include APPA's concern in the Reliability Standards development process.

- Para 1861 – direct the ERO to develop appropriate modifications to this Reliability Standard to address the power factor range at the interface between LSEs and the Bulk-Power System.
- Para 1885 – consider Dynegy's suggestion to improve the standard. Dynegy believes that VAR-002-1 should be modified to require more detailed and definitive requirements when defining the time frame associated with an incident of non compliance (i.e. each 4-second scan, 10-minute integrated value, hourly integrated value).

Order 724: 1

- Para 47 – the Commission remands to the ERO the proposed interpretation of VAR-001-1, Requirement R4 and directs the ERO to revise the interpretation consistent with the Commissions discussion below.

Directives Unassigned to Projects

Total: 0

Reliability Standard Family: Miscellaneous

Definition of the Bulk Electric System

On November 18, 2010 FERC issued Order 743 and directed NERC to revise the definition of Bulk Electric System so that the definition encompasses all Elements and Facilities necessary for the Reliable Operation and planning of the interconnected Bulk Power System. Phase I of Project 2010-17 Definition of Bulk Electric System concluded on November 21, 2011 with stakeholder approval of a revised definition of Bulk Electric System and an application form titled "Detailed Information to Support an Exception Request," referenced in the Rules of Procedure Exception Process. The revised definition, modifications to the Rules of Procedure to provide a process for determining exceptions to the definition, and an application form to support that process, will all be presented to the NERC Board of Trustees for adoption and then filed with regulatory authorities for approval.

Phase 2 of the project was initiated to develop appropriate technical justification to support refinements to the definition that were suggested by stakeholders during Phase I and to refine the definition as technically justified. In addition, during Phase 2 the drafting team will address FERC's directives from Orders 773 and 773-A.

CEAP

In response to concerns expressed by stakeholders and regulators in both the United States and Canada, NERC developed a Cost Effective Analysis Process "CEAP" that is currently being piloted. The NERC CEAP will introduce the concept of cost consideration and effectiveness into the development of new and revised standards to afford the industry opportunities to offer alternative methods to achieve the reliability objectives of draft standards that may result in fewer implementation costs and resource expenditures. The NERC CEAP was developed from the Northeast Power Coordinating Council (NPCC) regional CEAP. NPCC developed the first regional CEAP in response to concerns raised by its regional Board of Directors regarding the need for standards development to consider potential cost impacts.

The NERC CEAP introduces cost consideration to the standards development process in two phases. These two phases will be completed during the comment periods, and both involve posing some additional voluntary questions to industry. Note that the NERC CEAP may be revised based upon implementation experience as it is piloted. The first phase of the CEAP will be implemented during the SAR stage to determine cost impact and identify "order of magnitude" or potentially egregious costs, to determine if a proposed standard will meet or exceed an adequate level of reliability, and to determine what potential risks are being mitigated. This information will be used as a gateway to determine if a project should move forward to the standard development and drafting stage or be remanded back to the requestor. The second phase will be done later in the standard development process and afford industry the opportunity to offer more cost-efficient solutions that may be equally effective to achieving the reliability intent of the draft standard. This second step will result in a report that will be respectful of any market-sensitive information. This report will be posted at the time the standard is balloted. The report will present the data collected in a manner that will provide the industry with representative cost implementation and effectiveness information to allow a more informed choice during balloting. Some entities are unsure of implementation costs currently, and this effort will result in an opportunity to share information, promote consensus, and alleviate concerns over cost and effectiveness.

The application of both phases of the NERC CEAP will be to all new NERC standards. Only the second cost-effectiveness phase is envisioned to be applied to revised, urgent action, or expedited standards. Existing standards being revised have already been deemed to be required to meet an adequate level of

reliability; therefore, a cost impact assessment Phase One of the CEAP at the SAR phase is likely unnecessary.

Geomagnetic Disturbance Operations (GMD)

Project 2013-03 will develop Reliability Standards to mitigate the risk of instability, uncontrolled separation, and Cascading as a result of geomagnetic disturbances (GMDs) through the application of operating procedures and strategies that address potential impacts identified in a registered entity's assessment as directed in FERC Order 779.

While the impacts of space weather are complex and depend on numerous factors, space weather has demonstrated the potential to affect the Reliable Operation of the BPS. During a GMD event, geomagnetically induced current (GIC) flow in transformers may cause half-cycle saturation, which can increase absorption of Reactive Power, generate harmonic currents, and cause transformer hot spot heating. Increased transformer Reactive Power absorption and harmonic currents associated with GMD events can also cause protection system Misoperation and loss of Reactive Power sources, the combination of which can lead to voltage collapse.

The project will develop requirements for registered entities to employ strategies that mitigate risks of instability, uncontrolled separation, and Cascading caused by GMD in two stages as directed in order 779:

Stage 1 standard(s) will require applicable registered entities to develop and implement operating procedures that can mitigate the effects of GMD events.

Stage 2 standard(s) will require applicable registered entities to conduct initial and ongoing assessments of the potential impact of benchmark GMD events on their respective systems as directed in Order 779. The Second Stage GMD Reliability Standards must identify benchmark GMD events that specify the severity of GMD events that applicable registered entities must assess for potential impacts on the BPS. If the assessments identify potential impacts from benchmark GMD events, the Reliability Standards will require the registered entity to develop and implement a plan to mitigate the risk of instability, uncontrolled separation, or Cascading as a result of a benchmark GMD event. The development of this plan cannot be limited to considering operational procedures or enhanced training alone but will, subject to the potential impacts of the benchmark GMD events identified in the assessments, contain strategies for mitigating the potential impact of GMDs based on factors such as the age, condition, technical specifications, system configuration, or location of specific equipment.