

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Reliability Standards Development Plan

2015–2017

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RELIABILITY | ACCOUNTABILITY



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Executive Summary

The 2015-2017 Reliability Standards Development Plan (2015-2017 RSDP) is another bold step towards transforming the NERC Reliability Standards to “steady-state” (for purposes of this Plan, that term 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). During 2015, the NERC Reliability Standards will reach steady-state¹ and the number of active projects will dramatically decrease.

By the end of 2015, almost all or all of the Paragraph 81 (P81) candidates², the Independent Expert Review Panel’s (IERP) recommendations for requirement retirement, and Federal Energy Regulatory Commission (FERC) directives issued prior to December 2012 will have been addressed. Projects that were languishing for years, as well as periodic reviews, will have been completed. The industry will also have completed large projects to respond to FERC orders; including, for example, Geomagnetic Disturbances, Critical Infrastructure Protection (CIP) Version 5 Revisions, and CIP-014 Physical Security, revised the Transmission Operations (TOP) and Interconnection Reliability Operations and Coordination (IRO) standards to address concerns identified in FERC’s proposed remand. This is a significant achievement – the Standards Committee (SC) worked diligently with NERC to determine project schedules and manage industry workload. Stakeholders engaged throughout North America to provide expertise during standard development ensuring that all projects were of high quality and adhered to timely schedules.

Now, in the 2015-2017 RSDP, the number of projects necessary to reach steady-state by 2015 is reduced and the pace of the work will likely become more deliberate. Six projects that began during 2014 will be completed in 2015, while four new projects will be initiated in 2015, with one focused on aligning the Glossary of Terms used in NERC Reliability Standards with the Definitions used in the Rules of Procedure (Rules of Procedure, Appendix 2). This reduction in planned Standards projects provides a bandwidth to: 1) respond to emerging risks, if any, to reliability, 2) establish a quality- and content-enhanced periodic review, and 3) address any new FERC orders or directives. Also, given the increased focus on quality during the standard development process, as well as active engagement of the FERC Office of Electric Reliability staff during the standards development process, FERC directives and orders on existing standards are expected to trend lower.

Following the completion of the work to achieve steady-state, the Reliability Standards will continue to be assessed for quality, content or alignment with other standards through enhanced periodic reviews, building on the foundation established by the IERP³. These enhanced periodic reviews will also provide an opportunity to incorporate lessons learned from understanding the characteristics of quality, content and results-based standards; further target applicability based on risk; and clarify compliance assessment so the Reliability Standards achieve the intended reliability benefit without creating undue burden on industry. The NERC model is unique in the realm of regulation; and, with the participation by stakeholders, the SC and applicable regulatory authorities, we are demonstrating that this is a viable regulatory model.

¹ As stated in the 2014-2016 RSDP and 2014-2016 Standards Committee Strategic Work Plan, Steady-State means a set of clear, concise, high quality and technically sound Reliability Standards that are results-based, while retiring requirements that do little to promote reliability.

² There are 6 P81 candidates that will be addressed during the enhanced periodic reviews.

³ The North American Electric Reliability Corporation (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. The primary scope was an assessment of the content and quality of the Reliability Standards, including identification of potential Bulk-Power System (BPS) risks that were not adequately mitigated.

Steady-State

The NERC Reliability Standards will reach steady-state in 2015.

This section provides information on the status of FERC directives, Paragraph 81 candidates and the IERP's recommendations for retirement. Completion of projects is discussed in the next section, "2014 Status Report."

Directives

In 2013, NERC set out to address the 191 FERC directives that were issued and unaddressed prior to December 2012:

	2012 Directives	2013/2014 Directives	Total
Issued prior to year-end 2012*	191		
Issued in 2013/2014*		46	
Resolved as of March 1, 2014	122	11	
Remaining	69	35	104
Projected to be resolved in 2014	45	29	74
Projected to be remaining at year-end 2014	24	6	30

*Does not include non-standards' related directives

Table 1. Completion of Directives

While this is one benchmark, it is also imperative to address the FERC directives issued post-December 2012 in a timely fashion. As noted in the footnote to the chart above, FERC issued some directives that require work from groups outside of standards, such as the NERC technical committees, or another internal NERC department, such as Reliability Assessment and Performance Analysis (RAPA). These directives, as they cannot be resolved through a Standards process, are not included in the above numbers.

As depicted in Table 1, the majority of the 191 Directives (115 or 60 percent) were addressed in 2013. Depending upon project completion, 167 will be addressed at year-end 2014.

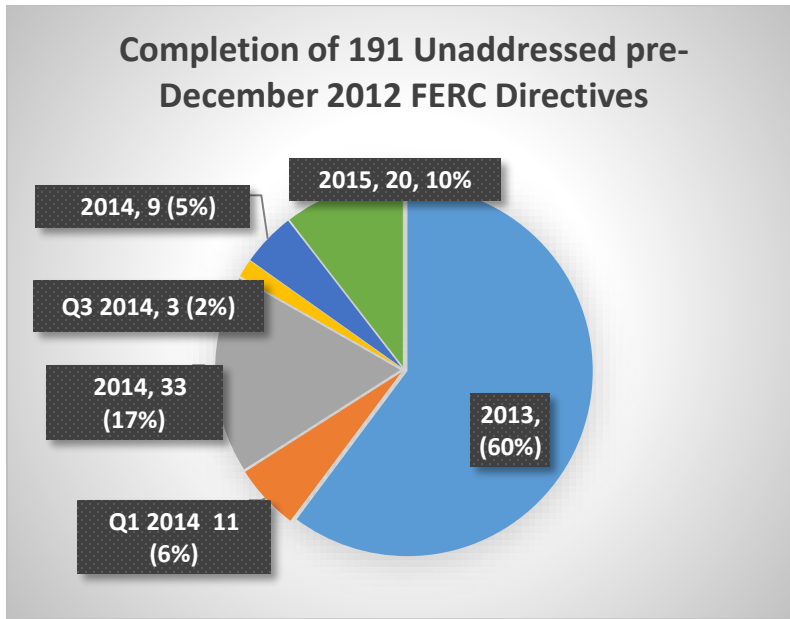


Chart 1. Completion of 191 Directives

FERC has issued 55 directives since December 2012. Nine of those pertain to areas outside of standards. Eleven have been addressed. Of the remaining 35, 29 are projected to be addressed in 2014 and six in 2015, as shown in Chart 2.

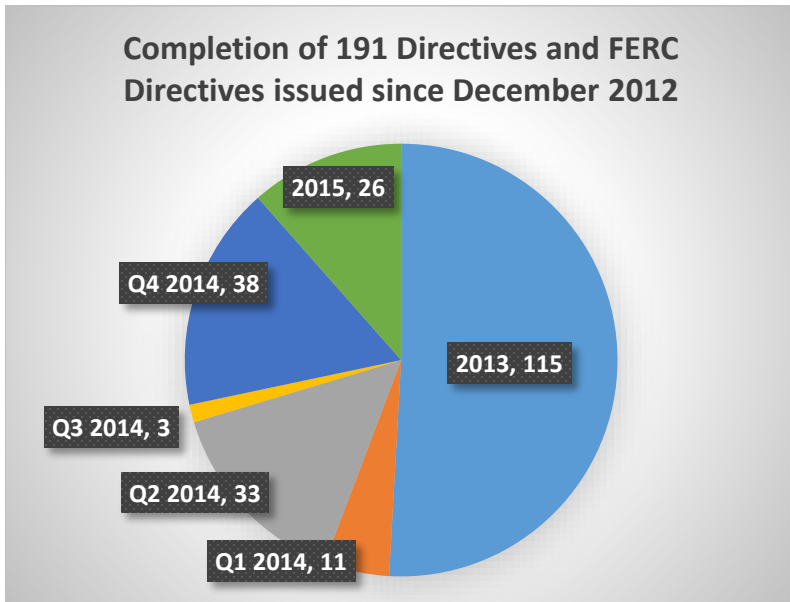


Chart 2. Completion of Remaining Directives

Paragraph 81 Candidates and IERP Recommendations for Retirement

The P81 project was initiated in response to Paragraph 81 of FERC's March 15, 2012 Order.^{4,5} Candidate requirements for retirement filed in a Phase 1 of the project were approved by FERC in Order 788, issued on November 21, 2013.⁶ In addition to candidate requirements filed in Phase 1, stakeholders identified 217 candidates for consideration. These candidates were addressed through standard development projects for each standard, rather than in one project for efficiency. Further, the IERP recommended 147 candidates for retirement.⁷

There was some overlap in the requirements recommended for retirement—an additional 217 candidates and the 147 recommended by the IERP. When combined, a total of 281 unique requirements were identified and are projected for standard development team consideration as follows:

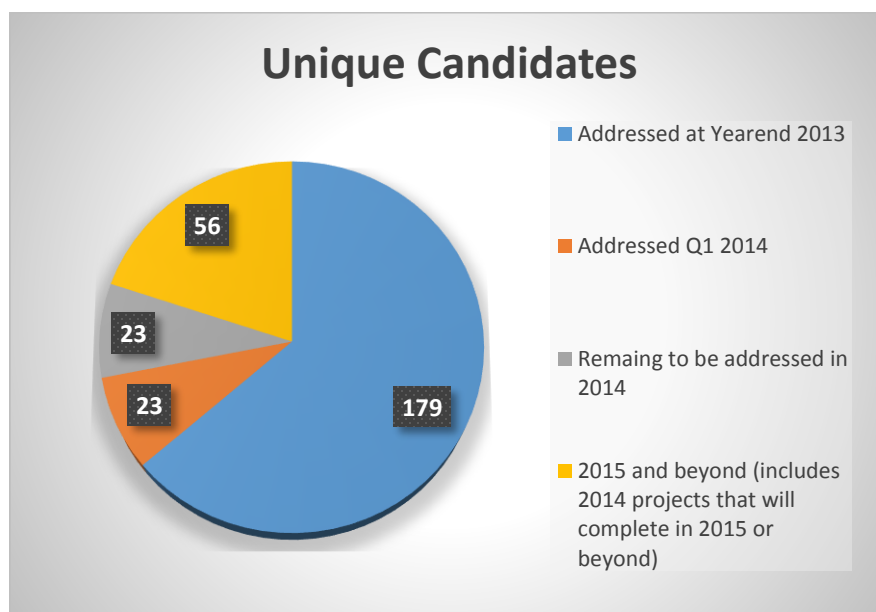


Chart 3. Candidates Unique for P81 and IERP

⁴ 138 FERC 61,193, Order Accepting with Conditions the Electric Reliability Organization's Petition Requesting Approval of New Enforcement Mechanisms and Requiring Compliance Filing, March 15, 2012.

⁵ Id., p. 81: ...The Commission is interested in obtaining views on whether such requirements could be removed from the Reliability Standards with little effect on reliability and an increase in efficiency of the ERO compliance program. If NERC believes that specific Reliability Standards or specific requirements within certain Standards should be revised or removed, we invite NERC to make specific proposals to the Commission identifying the Standards or requirements and setting forth in detail the technical basis for its belief. In addition, or in the alternative, we invite NERC, the Regional Entities and other interested entities to propose appropriate mechanisms to identify and remove from the Commission-approved Reliability Standards unnecessary or redundant requirements. We will not impose a deadline on when these comments should be submitted, but ask that to the extent such comments are submitted NERC, the Regional Entities, and interested entities coordinate to submit their respective comments concurrently.

⁶ FERC Order No. 788, 145 FERC 61,147, Electric Reliability Organization Proposal to Retire Requirements in Reliability Standards, November 21, 2013.

⁷ See Appendix E of the [Independent Experts Review Project](#).

Resolution

Recommendations for retirement are tracked at the requirement level. If the entire requirement was recommended for retirement, drafting teams may have considered one action (or part of a requirement) suitable for retirement, but determined that another action within a requirement should be retained. In conducting the analysis to determine whether the drafting team followed a recommendation for retirement, if the intent of the recommendation was met or if the majority of the requirement was retired, this analysis considers the recommendation addressed. With those considerations, the status of the resolution for 179 candidates addressed as of the second quarter of 2014 is:

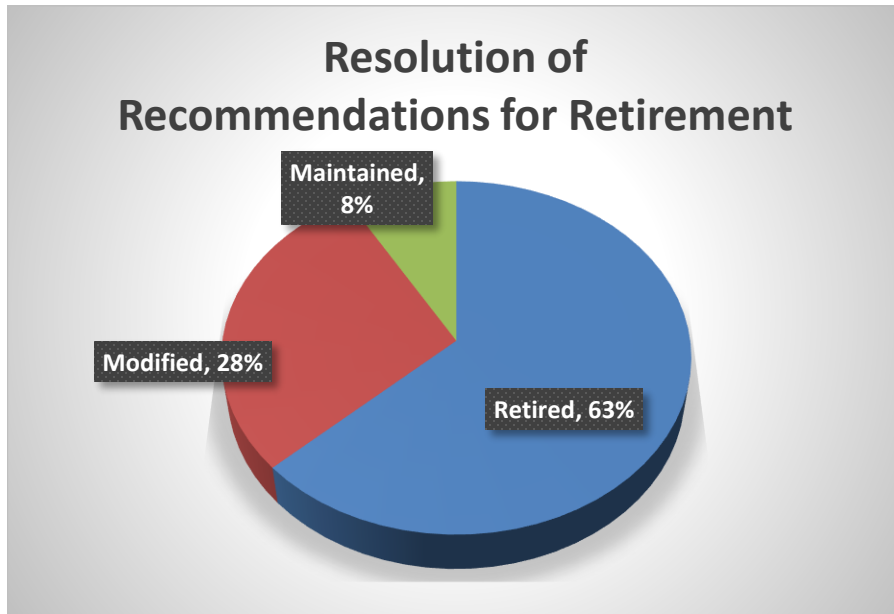


Chart 4. Resolution of Recommendation for Retirement

2014 Progress Report

The 2014–2016 RSDP identified thirteen active projects to be conducted over the three-year period, of which eight are projected to be completed by year-end 2014. There are ten additional projects that have continued development from the 2013-2015 RSDP, all of which are scheduled to be completed in 2014. Finally, there are four projects that were initiated in 2014 as a result of a reliability need or to respond to a FERC order or directive.

An “*” next to a project indicates that the SC has not yet accepted a Standards Authorization Request (SAR) for posting.

Projects that were listed in the 2014–2016 RSDP that were withdrawn or are scheduled to be completed in 2014:

- Project 2008-02 Undervoltage Load Shedding and Underfrequency Load Shedding
- Project 2007-11 Disturbance Monitoring
- Project 2009-02 Real-Time Reliability Monitoring and Analysis Capabilities (consolidated into Project 2014-03 TOP/IRO Revisions)⁸
- Project 2009-03 Emergency Operations
- Project 2010-02 Connecting New Facilities to the Grid
- Project 2010-05.2 Phase 2 of Protection System Misoperations: SPS/RAS
- Project 2010-08 Functional Model Glossary Revisions (withdrawn)
- Project 2010-14.2 Periodic Review and Revisions of BAL-004, BAL-005 and BAL-006
- Project 2012-09 Implementation of IRO Five-year Review Recommendations
- Project 2012-13 NUC Review and Implementation
- Project 2013-03 Geomagnetic Disturbance Mitigation Measures (Stage 2)

Two projects were listed as pending technical committee input and initiated in the first quarter of 2014:

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

The following projects were listed in the 2013-2015 RSDP.⁹ These projects have all have been completed or are scheduled to be completed by the end of 2014:

- Project 2007-02 Operating Personnel Communications Protocol
- Project 2007-06 System Protection Coordination
- Project 2008-12 Coordinate Interchange Standards
- Project 2010-01 Operations Personnel Training
- Project 2010-03 Modeling Data – MOD B

⁸ The issues and directives assigned to Project 2009-02 are being addressed in Project 2014-03 Revisions to TOP/IRO Reliability Standards, which has a filing deadline of January 31, 2015, subject to the outcome of balloting in that project.

⁹ These projects were also included in the 2014-2016 RSDP in the 203-2015 Progress Report section.

- Project 2010-04 Demand Data – MOD C
- Project 2010-05.1 Phase 1 of Protection Systems: Misoperations
- Project 2010-14.1 Phase 1 of Balancing Authority Reliability-Based Control: Reserves
- Project 2012-05 ATC Revisions – MOD A
- Project 2013-04 Voltage and Reactive Control

The following projects were identified as either an emerging issue or developed in response to a FERC order or directive:

- Project 2014-02 CIP Version 5 Revisions
- Project 2014-01 Standards Applicability for Dispersed Generation Resources
- Project 2014-03 Revisions to TOP/IRO Standards
- Project 2014-04 Physical Security

Of the above projects, all are on track to be completed in 2014, except several projects that were either withdrawn or have a longer timeline due to 1) coordination with other projects, or 2) a significant overlap in drafting team membership with projects being completed in 2013.

- Project 2010-08 Functional Model Glossary Revisions – Withdrawn because it was determined that the project was not needed for reliability.
- Project 2012-09 Implementation of IRO Review – put on hold to facilitate coordination with Project 2014-03 Revisions to TOP and IRO Reliability Standards.
- Project 2008-02 Undervoltage Load Shedding and Underfrequency Load Shedding – being coordinated with Project 2009-03 Emergency Operations and the definition of Special Protection System being revised in Project 2010-05.2 Phase 2 of Protection System Misoperations: SPS/RAS
- Project 2009-03 Emergency Operations – being coordinated with Project 2008-02 Undervoltage Load Shedding and Underfrequency Load Shedding,¹⁰ which is being coordinated with the definition of Special Protection Systems.
- Project 2010-05.2 Phase 2 of Protection System Misoperations: SPS/RAS – being coordinated with Project 2008-02 Undervoltage Load Shedding and Underfrequency Load Shedding.
- Project 2010-14.2 Phase 2 of BAL-004, BAL-005 and BAL-006 – a periodic review of the three standards in this project was delayed because of significant drafting team membership overlap with other BAL projects that were not completed as soon as anticipated.*
- Project 2014-0X PRC-001 (Separating PRC-001 from Project 2014-03 Revisions to TOP/IRO Standards and Project 2007-06 System Protection Coordination)*

¹⁰ The current EOP-003-2 contains requirements pertaining to UVLS, and the drafting team are working on whether to move those elements into PRC-010. For project 2010-05.2 SPS, the revisions to the definition of SPS/RAS affect PRC-010, which is a second level of coordination.

2015 Projects

As discussed in the prior section, there are six projects that were in process in 2014 that are projected to continue into 2015. Four of these projects, Project 2008-02 Undervoltage Load Shedding, Project 2008-02.5 Underfrequency Load Shedding, Project 2009-03 Emergency Operations and Project 2010-14.2 Revisions of BAL-004, BAL-005 and BAL-006 may complete in 2014, reducing the number of projects carrying over into 2015 to two (2).

Two of the projects that are identified below as being initiated in 2013 are directly related to resolving remaining FERC Directives, one is to complete the review of the FAC standards from the 2013 periodic reviews, and the remaining project is being conducted to align the Glossary of Terms used in the NERC Reliability Standards and the Definitions used in the Rules of Procedure. The project to complete the FAC standards review may be included with the 2015 Periodic Review.

Additionally, the IERP identified three high-level gaps that were reviewed by the NERC Operating Committee in 2014. It is anticipated that two of the issues, Outage Coordination and Situational Awareness, will be addressed by the TOP/IRO Revisions project. Depending upon the outcome of that project, additional work may be necessary. The third issue, Governor Frequency Response, was determined by the Operating Committee as a potential area of concern, but one that is being monitored. Depending upon the findings of the Operating Committee on this issue, more work may be necessary for this concern, as well.

An “*” next to a project indicates that the SC has not yet accepted a Standards Authorization Request (SAR) for posting.

Projects continuing from 2014 into 2015

As stated above, the following projects will continue from 2014:

- Project 2012-09 Implementation of IRO Review (on hold pending completion of the TOP/IRO Revisions)*
- Project 2008-02 Undervoltage Load Shedding¹¹
- Project 2008-02.5 Underfrequency Load Shedding
- Project 2009-03 Emergency Operations
- Project 2010-05.2 Phase 2 of Protection System Misoperations: SPS/RAS
- Project 2010-14.2 Phase 2 of BAL-004, BAL-005 and BAL-006
- Project 2014-0X PRC-001 (Separating PRC-001 from Project 2014-03 Revisions to TOP/IRO Standards and Project 2007-06 System Protection Coordination)

Projects to be initiated in 2015¹²

To achieve steady-state, the following projects will be initiated in 2015. The EOP and FAC periodic review projects planned for initiation in 2015 complete reviews that were deferred by Review Teams in 2013, either due to interdependencies with standards that were pending regulatory approval, or to gain compliance experience prior to conducting the review.

¹¹ Projects 2008-02 and 2008-02.5 have the same SAR and SDT, but their respective Standards have been posted separately due to timing of the projects.

¹² See Appendix 1 for 2015 project detail.

Consistent with the approach applied to prioritize projects in the 2014-2016 RSDP and used by the SC for new projects, such as Project 2014-01 Standards Applicability for Dispersed Generation Resources, new projects for 2015 have been assigned a prioritization of High, Medium, Low or Pending Technical Committee input. Specific elements considered in prioritization include: (1) Reliability Issues Steering Committee (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 prioritization in this RSDP does not include projects in progress at year-end 2014, since those projects have been previously prioritized. Additionally, this plan does not include any new projects that may need to be initiated consistent with the Standard Processes Manual (SPM), in response to FERC directives issued after August 2014, or to implement the recommendations from the Risk-Based Registration initiative. Any such projects initiated by the SC will be added to the Project Tracking Spreadsheet posted on the SC's webpage for a real-time tracking, and to the next RSDP.

Prioritization Considerations for 2015 Projects:

Medium Priority

- Project 2015-01 TPL Directives (prioritized by SC in 2014)*
 - Two FERC directives
 - RISC: medium priority area (Operational Modeling and Model Inputs)
 - IERP considerations: minor quality and content
- Project 2015-02 Periodic Review of EOP-004, EOP-005, EOP-006 and EOP-008*
 - No FERC directives
 - RISC: medium priority area (Operational Modeling and Model Inputs)
 - IERP considerations: some content and some quality
 - Three P81 Candidates
- Project 2015-03 Periodic Review of System Operating Limit Standards (FAC-010, FAC-011, and FAC-014)*
 - RISC: medium priority area (Operational Modeling and Model Inputs)
 - IERP: content and quality issues
 - Two P81 candidates

Low Priority

- Project 2015-04 Alignment of Glossary of Terms used in NERC Reliability Standards and the Definitions used in the Rules of Procedure (Rules of Procedure Appendix 2)*

Sustainable Approach to Periodic Reviews¹³

At the February 6, 2014 Board of Trustees (Board) meeting, the Board requested that NERC management and the leadership of the SC work together to develop a mutually acceptable metric for 2015-2017, including a content and quality grading system for the Reliability Standards as part of the metric. Jointly, the following approach was developed, which was endorsed by the SC on March 12, 2014, and, in summary form, adopted by Corporate Governance and Human Resources Subcommittee of the Board on March 20, 2014.

2014 and 2015 Metric

The metric for 2014 and 2015 focuses on ensuring certain Reliability Standard projects are completed in a timely manner. For 2014, the standard projects are all high priority standard projects, many with regulatory deadlines.

2016 and 2017 Metric

The implementation of an enhanced Reliability Standard periodic review for quality and content takes into consideration the following issues: (1) folding the enhanced quality and content periodic review into the period review required by Section 13 of the SPM; (2) a quality and content review of the steady-state Standards developed, considering the use of, or adaptation of, the 2013 Independent Expert Review Team's quality and content scoring system; (3) the formation of a cross-functional task force to conduct periodic reviews of steady-state Reliability Standards, potentially consisting of Committee chairs, NERC management, and NERC and stakeholder subject matter experts (with all task force meetings open to the public); (4) the task force's use of the quality and content system developed in response to (2), above, to identify needed enhancements to steady-state standards for inclusion in a Standards Authorization Request (SAR) processed through the standards development process and completed within a year from the date of posting of the SAR, unless technical review and study is needed (to the extent possible, the inclusion of identified enhancements in a SAR shall be limited focusing enhancements rather than re-opening an entire standard(s); and (5) the development of an annual task force review timeline starting with the cross-functional task force being operational no later than mid-2015, so it can identify which standards will undergo the enhanced period review for inclusion in the 2016-2018 Reliability Standards Development Plan.

The above summary of the metric approach shows a focus on the completion of transforming NERC's Reliability Standards to a steady-state by the end of 2015, and, thereafter, the initiation of an enhanced periodic review to address quality and content issues related to the steady-state Reliability Standards. It is contemplated that approximately 25 percent of the steady-state Reliability Standards could begin the enhanced periodic review in 2015.

At its March 2014 meeting, the SC appointed a periodic review development team (consisting of the SC Executive Committee and the Project Management and Oversight and Process Subcommittees chairs) to work with NERC staff and legal to develop the attributes of the enhanced quality and content periodic review. This team developed an approach to address the Board's direction, as summarized below.

Summary of draft enhanced periodic review approach

- The enhanced periodic review approach will satisfy NERC's obligations under Section 13 of the *Standard Processes Manual*, and will be conducted in accordance with that section.

¹³ During 2014 this framework is being presented for stakeholder comment, and then Board approval, so the final framework may differ in some respects from the approach outlined here.

- The SC shall appoint a standing cross-functional team including NERC staff and the NERC standing committee representatives to work with the Section 13 *“review team of subject matter experts.”* This team will be appointed by the SC, who will adopt the results of the team’s deliberations.
- The cross-functional team shall be operational no later than the beginning of 2015 so it may make recommendations to the SC on the Reliability Standards that should undergo the enhanced periodic review in 2016-2018, and so these projects may be included in the 2016-2018 Reliability Standards Development Plan.
- NERC’s five-year periodic review template that was successfully employed for a number of standards in 2013 and 2014 has been revised and adapted to include those quality and content questions developed by the Independent Expert Review Panel that were not already included. The template was further adapted to eliminate duplicative questions, and to provide the cross-functional Review Team with a clear framework to conduct the periodic reviews. A new question was added to consider whether the applicability section or requirements can be revised for smaller entities, provided that there is technical justification to support tailoring the applicability.
- A dashboard will be developed for each reviewed standard indicating whether it has a score of Green, Yellow or Red, according to the following grading system:
 - Green = no quality and content changes needed – standard confirmed as steady-state;
 - Yellow = the standard is sufficient to protect reliability and meet the reliability objective of the standard; however, there may be future opportunity to improve a non-substantive or insignificant quality and content issue – i.e., continue to monitor; and
 - Red = the standard needs to be retired or revised to address identified quality and content issues.
- Standards graded as “Red” by the cross-functional Review Team will be revised in a manner consistent with applicable sections of the SPM.

In 2015, the cross-functional Review Team appointed by the SC will prioritize families or groups of standards for review starting in 2016 and going forward. As resources permit, reviews of standards may begin in 2015.

Appendix 1 – Projects for 2015

Project 2015-01 TPL Directives

This project will address two directives and consider other improvements to TPL-001-4 — Transmission System Planning Performance Requirements.

Order 678:

- Para 40 - Direct NERC to modify Reliability Standard TPL-001-4 to address the concern that the six month threshold could exclude planned maintenance outages of significant facilities from future planning assessments.
- Para 89 - Directs NERC to consider a similar spare equipment strategy for stability analysis upon the next review cycle of Reliability Standard TPL-001-4.

Project 2015-02 Periodic Review of EOP-004, EOP-005, EOP-006 and EOP-008

This periodic review project will review four (4) EOP standards for which the review was delayed to allow the Electric Reliability Organization (ERO) and industry to gain compliance experience with revisions to the standards that became enforceable in 2013 and early 2014. The review team will also consider one directive and, as part of its recommendation on EOP-006, recommend whether a guideline should be developed.

Order 749:

- Para 24 - (EOP-006) ...Once the standard is effective, if industry determines that ambiguity with the term [unique tasks] arises, it would be appropriate for NERC to consider its proposal to develop a guideline to aid entities in their compliance obligations.

Project 2015-03 Periodic Review of System Operating Limit Standards (FAC-010, FAC-011, and FAC-014)

The three NERC Reliability Standards in this periodic review project concern methodologies for determining and communicating System Operating Limits. In 2013, a five-year review team (FYRT) assigned to review the FAC family of standards recommended review of these three standards be delayed until shortly after approval of the TPL, TOP, and IRO standards which were pending regulatory approval at the time of the FAC five-year review. TPL-001-4 was approved by FERC in October 2013; the TOP and IRO standards are being revised in 2014 for filing with applicable regulators in early 2015.

Project 2015-04 Alignment of Definitions in *Glossary of Terms used in NERC Reliability Standards* and *NERC Rules of Procedure, Appendix 2*

This project will review the NERC *Glossary of Terms Used in Reliability Standards* (Glossary) to determine what changes are necessary to align the Glossary definitions with definitions of the same terms used in the NERC *Rules of Procedure, Appendix 2*.