NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Reliability Standards Development Plan

2013-2015

Approved by Board of Trustees
TBD

RELIABILITY | ACCOUNTABILITY




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Chapter 1 – Executive Summary

The 2013-2015 Reliability Standards Development Plan (RSDP) represents a bold new work plan for standards development, designed to transition from the existing set of NERC Reliability Standards to a clear, concise, and stable body of world-class, high-quality reliability standards that ensure the reliability of the bulk power system. At the same time, this plan brings the ERO standards program current with its obligations to address regulatory directives and conduct five-year reviews of all standards, all within the plan's 2013-2015 time horizon. NERC staff, the Standards Process Improvement Group (SPIG) and the Standards Committee (SC) have worked closely to conduct an intense evaluation of the current issues facing standards development. Based on this evaluation, this plan sets forth an approach that will result in a world-class body of reliability standards by 2015.

Specifically, in 2013, this new approach involves addressing three major areas of work:

- **Existing Projects/Emerging Issues** - Current projects must be completed and new projects that either support high risk reliability issues or emerging issues must be conducted in a timely and efficient manner
- **Reviews** - Five-year reviews must be conducted on standards that are due for assessment and have not been revised in recent standards development projects
- **Directives** - FERC directives must be addressed and the resulting revised standards filed

In addition, there are two major initiatives that will be applied across these three major work areas during their completion:

- Paragraph 81 concepts[1]
- Results Based Standards[2]

These two initiatives will be applied to each standard or group of standards within the three major work areas ensuring requirements that do little to ensure the reliability of the bulk power system are eliminated and all new or revised standards are drafted as results-based standards. The use of these initiatives will lead to a concise set of standards that have the necessary combination of risk-, performance-, and capability-based requirements to ensure the reliability of the bulk power system in North America.

Further, another element to be applied, as appropriate, to the three major areas of work is the use of self-correcting language[3] and/or the concurrent development of compliance information tools as may be proposed through the implementation of the Reliability Assurance Initiative (RAI). Further, close coordination between the standard drafting teams and NERC's Compliance Operations will be part of the overall drafting process.

[1] Information regarding Paragraph 81 can be located on the project page for Paragraph 81 Phase I on the NERC website.
[2] Information regarding Results Based Standards can be located on the NERC website under Resource Documents for Standards.
[3] For an example of self correcting language refer to how it was used for certain requirements in CIP version 5 standards.

In addition to developing a world-class body of standards, the standards development process is being revised in response to concerns raised by the NERC Board of Trustees (Board). Currently, the SPIG has recommended, and the SC and its subcommittees have developed, a set of changes which are intended to improve efficiency and the quality of standards. In response to a resolution issued by the Board at the November 2012 meeting calling for additional improvements in four areas, additional changes are being considered.

This document is meant to outline the activities in the development of reliability standards during 2013-2015. The work plan has been separated into the three work areas identified above. The areas are not exclusive; thus, although the work has been divided across the work teams, the individual standard drafting teams will continue to coordinate specific standards projects according to the scope of work assigned to the team by the Standards Authorization Request (SAR).

Chapter 2 – Joint Letter from the Chair of the Standards Committee and NERC's Vice-President and Director of Standards

To: NERC's Board of Trustees, Stakeholders, and Regulatory Authorities

The 2013-2015 Reliability Standards Development Plan is a vital ingredient towards transitioning from the existing set of standards to a clear, concise, and stable body of world-class, high-quality reliability standards that ensure the reliability of the bulk power system. At the same time, this plan brings the standards program current with its obligations to address regulatory directives and conduct five-year reviews of all standards.

To meet the objectives of the 2013-2015 RSDP will require a disciplined project management and review of current processes: streamlining the standards development process, suitably equipped standards drafting teams, and project management plans. Further, as new work is undertaken, careful consideration for the need of a standard will be assessed and, if so, address compliance considerations during its development. Although the standards development process is a key element to achieve the work plan, effective execution of the process will be a vital component to success.

We both wish to thank NERC's Board of Trustees and the Member Representatives Committee's Standards Process Improvement Group for their guidance and direction. We believe that this tactical plan, along with the additional enhancements contemplated regarding the Standards Committee's 2013-2015 Strategic Plan will ensure the development of timely, high quality standards ensuring bulk power system reliability, while at the same time, increasing the effectiveness of the development of reliability standards..

Sincerely,

Allen Mosher
Vice President, Policy Analysis and Reliability Standards, American Public Power Association
Chair, NERC Standards Committee

Mark Lauby
Vice President and Director of Standards,
NERC

Chapter 3 – Overview

This Plan provides:[4]

- an overview of a new strategic approach to this Plan
- the state of Standards at NERC, including
    - organization to facilitate a greater focus on production, rather than process;
    - efforts to create of a streamlined process;
    - identification of three work areas to address work needing to be accomplished;
    - application of Paragraph 81 and Results Based Standards concepts into all standards projects;
    - addressing compliance concerns;
- status updates for projects currently in development; and
- discussion of the future prioritization of standards development work.

This Plan is intended to project NERC's standards work expected for the 2013-2015 time horizon. Other unforeseen priorities may arise that will necessitate deviations in the future. Similarly, the estimated times listed for project completion may change based on unforeseen complexity emerging during the development of the standard. Hence, this Plan should be reviewed in context; it is a bold, new plan and is subject to change. However, the development of concise and clear world-class body of standards will continue to be the goal throughout the execution of these projects.

New Approach to the Development Plan

This Plan takes a bold new approach to standards development in that it completes ongoing and required work in a manner that transforms the current body of standards into an evolved body of world-class reliability standards that are effective, clear and concise.

Although some Version 0 Reliability Standards have been modified in response to regulatory directives, in many cases these changes have not been comprehensive. Additionally, clear and consistent compliance assessment remains a concern of industry stakeholders, and exerts pressure on standards development resources through the introduction of requests for interpretation and delays in reaching consensus on standards. This Plan addresses these challenges as described below.

[4] In addition to the NERC Standards staff maintains a complete, updated set of Standards information on the NERC website, which can be found at www.nerc.com.

The strategic changes in the 2013-2015 Reliability Standards Development Plan (Plan) strive to resolve these challenges, while, at the same time, reach a steady-state for standards development. These changes will require disciplined project management, streamlining the standards development process, suitably equipped standards drafting teams, and project management plans with clearly articulated milestones and deliverables.

As new work is undertaken, careful consideration of the need for a standard will be performed. If a standard is needed, compliance considerations will be addressed during standard development. Although the role of the Reliability Issues Steering Committee (RISC) is still being defined, it is anticipated that the NERC standards program will receive input from the RISC on the need for a standard that addresses a high-risk reliability issue. Further, RISC may also be the triage body that determines whether an issue should be addressed through the creation of standard or by another solution.

In total, the enhancements to the standards development process and the launching of the RISC will bring an improved discipline to the development of reliability standards. This discipline is expected to create greater certainty around the volume of work. Further, specific to the near-term work, in 2013, three major areas of work will be addressed:

- **Projects** - Current projects must be completed and new projects that either support high-risk reliability issues or emerging issues must be conducted in an efficient manner
- **Reviews** – Five-year reviews must be conducted on standards that are due for review and have not yet been revised through other standards development projects
- **Directives** - FERC directives must be addressed and the resulting revised standards filed

There are two major initiatives will be applied across the three major work areas during their completion:

- Paragraph 81 concepts
- Results Based Standards[5]

NERC Standards' Staff Reorganization

In late 2012, the NERC standards department evaluated the 2012 organization and determined changes were required to refocus resources on the production of standards, rather than executing and monitoring process. In October, the department was realigned into three teams of standards developers and one team focused on information management.

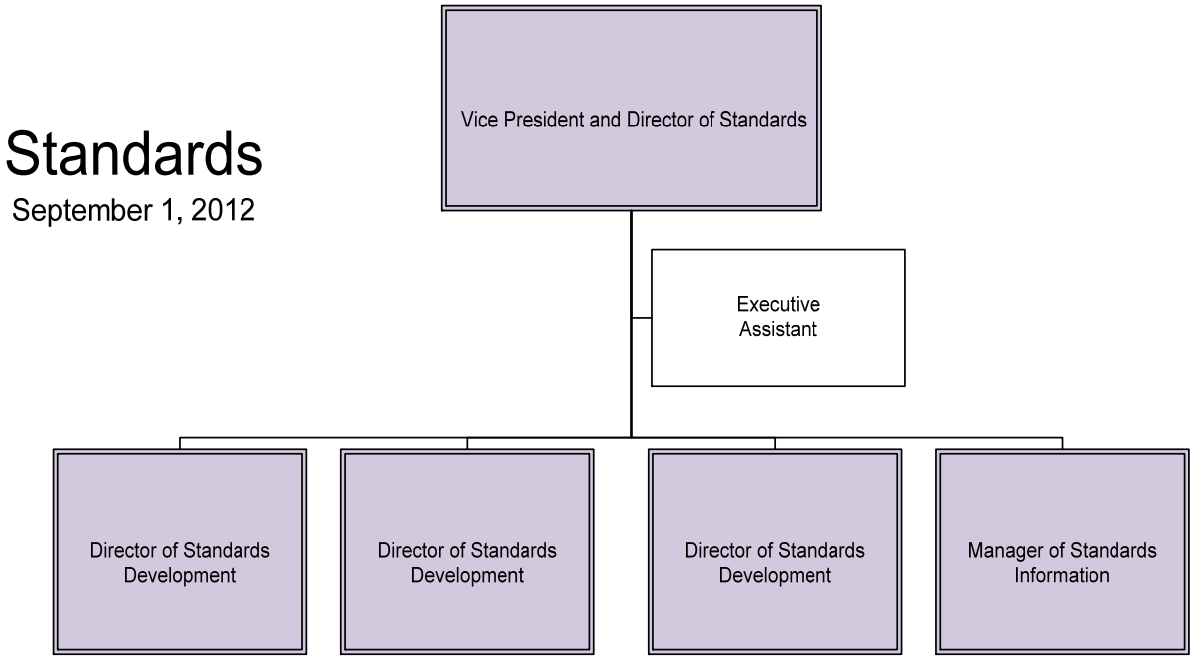
By creating teams of standards developers, the workload may be allocated by broad category to each of the teams. Each team will have one specific high level goal:

- Resolve directives through a process similar to the Paragraph 81, Phase I standards development project or the Omnibus enforcement filings

[5] NERC staff and the SC are working together to implement drafting principles to ensure that standard drafting teams apply these two major initiative across the three major work areas.

- Conduct the required five-year reviews for current standards
- Oversee emerging issue projects and the completion of remaining open projects

These teams will closely coordinate with each other to ensure a balance in workload and expertise is created to address each of these three major work areas.



Streamlined Process

NERC's vision for a successful ERO includes a standards development process that produces standards in a timely manner considering the technical expertise of industry, provides transparency into how compliance will be assessed and ensures consistency in the audit process. At its February 9, 2012 meeting, the Board requested the assistance of the Member Representatives Committee (MRC) to provide policy input, and a proposed framework, for specific improvements to the standards development process. The MRC Chair and Vice Chair invited several members of the MRC, two NERC Board members, the NERC CEO, and the SC Chair – a group collectively known as the Standards Process Input Group (SPIG) – to join with them as participants in developing recommendations to improve the standards development in the following key areas:[6]

- Clarity on the reliability objectives, technical parameters, scope, and the relative priority of the standards project
- The drafting process (developing the specific technical content of the standard)

[6] The recommendations can be located on the Standard Processes Manual Revisions to Implement SPIG Recommendations project page on the NERC website.

- Standards project management and workflow
- Formal balloting and commenting

Based on input from the stakeholders, the SPIG made five recommendations to modify the way NERC develops reliability standards:

1. **American National Standards Institute (ANSI):** NERC should continue to meet the minimum requirements of the ANSI process to preserve ANSI accreditation.
2. **Reliability Issues Steering Committee (RISC):** The NERC BOT is encouraged to form a RISC to conduct front-end, high-level reviews of nominated reliability issues and direct the initiation of standards projects or other solutions that will address the reliability issues.
3. **Interface with Regulatory and Governmental Authorities:** The NERC BOT is encouraged to task NERC management, working with a broad array of Electric Reliability Organization resources (e.g., the MRC, technical committees, Regional Entities, trade associations, etc.) to develop a strategy for improving the communication and awareness of effective reliability risk controls to increase input and alignment with state, federal, and provincial authorities.
4. **Standards Product Issues:** The NERC BOT is encouraged to require that the standards development process address the use of results-based standards; cost effectiveness of standards and standards development; alignment of standards requirements/measures with Reliability Standards Audit Worksheets (RSAWs); and the retirement of standards no longer needed to meet an adequate level of reliability.
5. **Standards Development Process and Resource Issues:** The NERC BOT is encouraged to require the standards development process to be revised to improve timely, stakeholder consensus in support of new or revised reliability standards. The BOT is also encouraged to require standard development resources to achieve and address formal and consistent project management and efficient formation and composition of standard drafting teams.

The Reliability Issues Steering Committee (RISC) (Recommendation 2) has been established. This committee will be tasked with identifying high risk reliability issues and may request technical research from one or more of the NERC committees and subsequently determine a direction to mitigate the risk. These solutions may result in the creation of a standard, or, alternatively, they may result in guidance documents, an alert, or other responsive action.

The SC was specifically charged with addressing SPIG Recommendations 1, 4, and 5. Since May of 2012, sub-teams of the Standards Committee Process Subcommittee (SCPS), supported by NERC standards and legal staff, have developed proposed revisions to the Standard Processes Manual (SPM) and associated changes to Section 300 of NERC's Rules of Procedure (ROP), which are now under industry review. As of the drafting of this document, changes to the SPM

in response to the SPIG recommendations, are posted for industry comment and continue to move forward.

Subsequently, at the November 2012 Board meeting, the Board issued a resolution that the Electric Reliability Organization must move forward to develop a body of high-quality, results-based standards and called for action in four areas, with reports due to the Board at the February 2013 meeting. The four areas for action are:

- The SC and standard development teams should be accountable to the Board while developing and maintaining high-quality reliability standards in a timely manner and further enabling the ERO to respond to reliability priorities, and the Standards Committee shall modify its governance, structure and scope to enable such accountability;
- Standard drafting teams should be staffed with a small number of subject matter experts that includes competencies in technical, legal, drafting, compliance, and project management;
- The SC should manage workflow and process to ensure the timely development of high-quality, results-based reliability standards; and
- The SC and NERC staff should work with the Reliability Issues Steering Committee (RISC) to jointly develop viable work plans to dispense with work that is no longer pertinent to reliability and aggressively pursue work that will result in a body of high-quality reliability standards that will address reliability risks to the bulk power system.

Additional changes are being considered by the SC in response to the Board's resolution, and the SC will present its recommendations at the February 2013 Board meeting.

The Identification of Three Work Areas

The evaluation of the work necessary to achieve a stable body of effective, concise and clear standards identifies three general work areas:

1. **Projects** - Current projects must be completed in a timely manner to resolve the identified reliability concerns that created the projects. This team will address the projects that were included in the 2012-2014 RSDP and the coordination plan to bring these projects to completion, along with projected timelines for the completion of each project. This work area also includes new projects that either support high risk reliability issues or other emerging issues. Completion of these projects will include application of the Results-Based Standards drafting concepts and Paragraph 81 concepts. In the event that a given project is sufficiently close to completion and applying these concepts would delay completion, the standard(s) involved would be scheduled for further review in a subsequent project to determine if additional modifications are necessary.
2. **Reviews** – Five-year reviews must be conducted on standards that are due for review and have not yet been revised through other standards development projects. A comprehensive review will include application of the Results Based Standards drafting

concepts and Paragraph 81 concepts, and will also include a review of the each standard in relation to other standards to eliminate duplicative requirements.

3. **Directives** - FERC directives across all orders must be addressed and the results filed. Completion of these projects will include application of the Results-Based Standards drafting concepts and Paragraph 81 concepts. In the event that a drafting team or industry determines that the directive is no longer optimal for reliability (whether it be due to application of the Paragraph 81 standards, that the directive has been overcome by events, or for another reliability-based reason) , a determination may be to make a filing with FERC to resolve the directive.

Each of these work areas have dedicated NERC staff, who will coordinate on a regular basis to ensure the interdependencies between these efforts are considered and addressed. Allocation of work has been determined in coordination with SC based on the requirement for each project. For example, a standard/requirement that has a single directive associated with it that is included in an ongoing project is assigned to the Projects team.

Application of Paragraph 81 and Results Based Standards Concepts

Transitioning the current body of standards into a clear, concise and effective body will require a comprehensive application of the following concepts: 1) elimination or revision of requirements that are duplicative or do little to improve reliability (the Paragraph 81 concept, which addresses the conciseness of the body of standards); and 2) ensuring that each standard, or family of standards, contains results-based requirements with sufficient clarity to hold entities accountable without being overly prescriptive as to how a specific reliability outcome is to be achieve (the "Results Based Standards" concept). A results-based requirement follows the form *"Which functional entit[y/ies], under what circumstances, shall do what for what reliability outcome."* The results-based concept, properly applied, addresses the clarity and effectiveness aspects of a standard.

Addressing Compliance Assessment Concerns

Based on feedback from stakeholders, there is a key link between Reliability Standards development and compliance considerations. A number of improvements are being considered to bridge this ongoing gap.

1. **Integration of Internal Controls with Standards**
   The ERO compliance monitoring program is transitioning to support reliability on a forward-looking basis with greater consideration and reliance on internal controls, as opposed to the current construct which focuses on the rearward-looking process of reviewing potentially significant amounts of evidence over the entire audit period. This is a shift from the current construct in which all violations, regardless of the risk created to the reliability of the bulk power system or when the violation occurred, must be processed.

   This new approach has been piloted in 2012 on two standard development projects in 2012: COM-003 and CIP version 5.

2. **Concurrent Development of Compliance Assessment Tools, such as Reliability Standard Audit Worksheets (RSAWs), and Standards**
   Another concept that has been piloted in the COM-003[7] and the CIP version 5[8] standards development projects is the concurrent development of the RSAW with the standard. While RSAW development is not part of the Standards Development Process, visibility into the impact the language of the standard has on compliance assessment has improved the drafting of these reliability standards.

Both of these approaches are still being piloted, with encouraging results to date. They will continue to be explored throughout 2013.

[7] Project 2007-02 Operating Personnel Communications Protocols – COM-003
[8] Project 2008-06 – Cyber Security – Order 706

Chapter 4 – Production Status

The 2012-2014 Reliability Standards Development Plan (2012-2014 RSDP) identified 14 active projects to be conducted over the three year period, of which 8 have either been completed or will be completed by 2012 year end.

Projects that were listed in the 2012-2014 RSDP as active:

Completed (8)

- 2006-06 Reliability Coordination
- 2007-03 Real-time Transmission Operations
- 2007-07 Vegetation Management
- 2007-17 Protection System Maintenance and Testing
- 2008-06 Cyber Security – Order 706
- 2009-01 Disturbance and Sabotage Reporting
- 2010-07 Generator Requirements at the Transmission Interface
- 2010-17 Definition of Bulk Electric System

To be completed (6)

- 2007-02 Operating Personnel Communication Protocols (schedule completion: second Quarter or Q2 of 2013)
- 2007-06 Protection System Coordination (schedule completion: Q2 of 2013)
- 2007-09 Generator Verification (schedule completion: Q2 of 2013)
- 2007-12 Frequency Response (May 31, 2013 filing deadline)
- 2010-14.1 Phase 1 of Balancing Authority Reliability-based Controls: Reserves (May 31, 2013 filing deadline for BAL-012; target completion for remaining standards Q2 of 2013)
- 2010-05.1 Phase 1 of Protection Systems: Misoperations (schedule completion: Q1 of 2014)

In addition to projects listed in the 2012-2014 RSDP, the following projects began development and are currently active (5):

- 2006-02 Assess Transmission Future Needs and Develop Transmission Plans (Filed Oct 2011)
- 2010-11 TPL Table 1, Footnote B (schedule completion: Q2 of 2013)
- 2010-13.2 Phase 2 of Relay Loadability: Generation
- 2013-02 Paragraph 81
- Definition of Adequate Level of Reliability

NERC and the Regional Entities also completed development of another 12 projects not listed in the 2012-2014 RSDP:

- Project 2008-10 Interpretation of CIP-006-1 for Progress Energy
- Project 2009-19 BAL-002-0 R4 and R5 (NWPP Reserve Sharing Group)
- Project 2009-22 Interpretation of COM-002-2 for the IRC
- Project 2009-26 — Interpretation of CIP-004-1 for WECC
- Project 2010-INT-01 Rapid Revision of TOP-006-2 for Florida Municipal Power Pool
- Project 2011-INT-01 Interpretation of MOD-028 for Florida Power & Light Company (Rapid Revision Standard)
- Reliability Standard BAL-002-WECC-2 - Contingency Reserve
- Reliability Standard PRC-006-NPCC-1 – Automatic Underfrequency Load Shedding
- Reliability Standard PRC-006-SERC-01 – Automatic Underfrequency Load Shedding Requirements
- Reliability Standard PRC-006-SPP-01 – Automatic Underfrequency Load Shedding
- Reliability Standard VAR-001-3 – Voltage and Reactive Control (WECC Regional Variance)
- Data Request for Order 754

Progress on Regulatory Directives

Since NERC became the Electric Reliability Organization (ERO), FERC has issued 44 Orders containing approximately 655 directives and guidances related to NERC Reliability Standards. Fifty-three percent of the directives (including guidances) have been resolved or will be resolved with the filing of the standards development projects that were approved by the Board in either November or December. This is a substantial increase from the 44 percent resolution rate reported in the 2012-2014 RSDP.

The chart below accounts for all outstanding directives and guidance issues remaining to be resolved.

Summary of Directives

There are currently 303 FERC directives or guidance remaining to be resolved:

- 206 are directives for specific action
- 97 are FERC guidance; each will be assessed by the standard drafting teams and tracked

Of the 206 directives for specific action:

- 84 will be completed in current projects (58 completed in 2012, 26 in 2013)
- Five are outdated or overcome by events (filing these in 2012)
- 116 are included in this 2013-2015 reliability standards development work plan, targeted for 2013 completion
- One is specific to a five- year review which will also be completed in 2013.

Expected Completion	Category	Directives	FERC Guidance	Yearly Total	Percent Complete
2012	*Completed with current projects*	58	31		
2012	*Outdated or overcome by events*	5	2	96	32%
Q1 or Q2 2013	*Completed with current projects*	26	19		
2013	*2013 project work plan*	116	39		
2013	*Directives for a NERC committee*		3		
2013	*Directives for 5 year reviews*	1	2		
2013	*Directives not specific to standards*		1	207	68%
		206	97	303	

Projects anticipated for completion in 2012 address 58 FERC directives and 31 guidance elements (shown below as directives/guidance for each project):

Board approved in November 2012

- Reliability Coordination (COM-001 and COM-002) – 11/3
- Protection System Maintenance and Testing – PRC-005-2 – 4/1
- Disturbance and Sabotage Reporting – CIP-001 and EOP-004 – 8/4

Board approved in December 2012

- Cyber Security Order 706 - 35/23

In 2013, NERC's goal is to resolve all of the outstanding directives or, if there are directives that cannot be resolved in 2013 due their complexity or the need for additional technical committee technical research, to provide a project plan to close the directives by the end of 2014.

Chapter 5 – Directives Team

As discussed above, this Plan reflects NERC's goal to resolve all of the outstanding directives in 2013 or, if there are directives that cannot be resolved in 2013, to provide a project plan to bring those directives to closure by the end of 2014. Work was allocated across the three teams based upon an analysis of which team's focus had the greatest impact on the standard or requirement made by NERC staff and SC representatives.[9] The directives team will be responsible for resolving directives associated with the:

- Modeling, Data, and Analysis (MOD) standards, which are divided into three projects previously identified for future action in the 2012-2014 Reliability Standard Development Plan:
  - Project 2012-05 ATC Revisions from Order 729
  - Project 2010-03 Modeling Data
  - Project 2010-04 Demand Data,
- Personnel Performance, Training and Qualifications (PER) standards
- Voltage and Reactive (VAR) standards
- Facilities Design, Connection, and Maintenance (FAC) standards
- Glossary

Additionally, projects addressing Frequency Response and Balancing Authority Reliability-based Control (BARC) will be completed in 2013.

A high level projection for the development of these projects is included in the Action Plan provided below. A detailed project plan with development milestones will be included with the submittal of the SAR.

[9] The work plans set forth below also rely on a streamlined standards development process that employs more informal consensus building upfront rather than consensus building solely through the comment and ballot period. This new process is being developed by the SC and NERC Staff and will be presented to the Board in February.

Action Plan for Directives Team

Priority Issue	Proposed Activity	Abstract	Deliverables	Targeted Milestones *Project Plans to be Developed with SAR*
1. Directives	MOD A – *ATC/TTC/CBM* *Project 2012-05 ATC Revisions Order 729*	Prepare and achieve approval on Reliability Standards for a subset of MOD standards identified in FERC Order 729 with regards to the Calculation of Available Transfer Capability, Capacity Benefit Margins, Transmission Reliability Margins, Total Transfer Capability and Existing Transmission Commitments.	• MOD-001 • MOD-004 • MOD-028 • MOD-029 • MOD-030	• Research Complete – 01/2013 • Informal Outreach – 04/2013 • SAR Developed – 07/2013 • Initial Comment Period/Ballot – 07/2013 • Recirculation Ballot – 09/2013 • Presented to BOT – 11/2013
	Frequency Response Directives and issues *Project 2007-12 Frequency Response*	The proposed standard would set a minimum Frequency Response obligation for each Balancing Authority, provide a uniform calculation of Frequency Response and Frequency Bias Settings that transition to values closer to natural Frequency Response, and encourage coordinated AGC operation.	• BAL-003	• Recirculation Ballot – 12/2012 • Presented to BOT – 02/2013 • Filed with FERC – 05/2013
	BARC Directives and issues *Project 2010-14.1 Balancing Authority Reliability-based Controls*	The purpose of this project is to ensure that Balancing Authorities take actions to maintain interconnection frequency with each Balancing Authority contributing its fair share to frequency control.	• BAL-012	• Initial Ballot – 01/2013 • Recirculation Ballot – 03/2013 • Presented to BOT – 05/2013 • Filed with FERC – 05/2013
			• BAL-001 • BAL-002 • BAL-013	• Initial Ballot – 01/2013 • Next Successive Ballot – 04/2013 • Recirculation Ballot – 06/2013 • Presented to BOT – 09/2013 • Filed with FERC – 09/2013
	MOD B – *Modeling Data* *Project 2010-03 Modeling Data*	Prepare and achieve approval on Reliability Standards that requires merging, upgrading and expanding existing requirements for entities to provide data used to model the Bulk Electric System which relates to Blackout recommendations and the modeling Initiative; and to prepare and achieve approval on Reliability Standards that clearly identifies the requirements for providing data.	• MOD-010 • MOD-011 • MOD-012 • MOD-013 • MOD-014 • MOD-015	• Research Complete – 01/2013 • Informal Outreach – 01/2013 • SAR Developed – 05/2013 • Initial Comment Period/Ballot – 06/2013 • Recirculation Ballot – 09/2013 • Presented to BOT – 11/2013

Priority Issue	Proposed Activity	Abstract	Deliverables	Targeted Milestones *Project Plans to be Developed with SAR*
	MOD C – ***Demand Data*** ***Project 2010-04 Demand Data***	**Prepare and achieve approval on Reliability Standards that requires merging, upgrading and expanding existing requirements for entities to provide data used to model the Bulk Electric System which relates to Blackout recommendations and the modeling Initiative; and to prepare and achieve approval on Reliability Standards that clearly identifies the requirements for providing data.**	• **MOD-016** • **MOD-017** • **MOD-018** • **MOD-019** • **MOD-020** • **MOD-021**	• **Research Complete – 03/2013** • **Informal Outreach – 03/2013** • **SAR Developed – 06/2013** • **Initial Comment Period/Ballot – 07/2013** • **Recirculation Ballot – 09/2013** • **Presented to BOT – 11/2013**
	PER Directives ***Project 2010-01 Support Personnel Training***	**Prepare and achieve approval on Reliability Standards that require the use of a systematic approach to determining training needs of generator operators and operations planning and support staff with a direct impact on the reliable operations of the bulk power system.**	• **PER-002** • **PER-005**	• **Research Complete – 04/2013** • **Informal Outreach – 04/2013** • **SAR Developed – 06/2013** • **Initial Comment Period/Ballot – 07/2013** • **Recirculation Ballot – 09/2013** • **Presented to BOT – 11/2013**
	FAC Directives	**Collect outage data for transmission outages of lines that cross both federal and non-federal lands, analyze it, and use the results to develop a standard that would apply to both federal and non-federal lands.**	• **Outage data collected by the appropriate party, whether it is TADS, Region or NERC** • **Possible new standard**	• **Research Complete – 04/2013** • **Informal Outreach – 04/2013** • **SAR Developed – 06/2013** • **Initial Comment Period/Ballot – 07/2013** • **Recirculation Ballot – 09/2013** • **Presented to BOT – 11/2013**
	NERC Glossary ***Project 2012 – 08 Definitions***	**To achieve approval on the NERC Glossary in order to respond to requests for clarification.**	• **Add statutory definitions of Bulk Power System, Reliable Operation, and Reliability Standard to the NERC Glossary** • **Modify existing definition of Transmission Operator and Generator Operator** • **Revise Functional Model to avoid confusion with the NERC Glossary**	• **SAR Developed – 2012** • **Initial Comment Period/Ballot – 2012** • **Successive Comment Period – 03/2013** • **Recirculation Ballot – 08/2013** • **Presented to BOT – 11/2013**

Priority Issue	Proposed Activity	Abstract	Deliverables	Targeted Milestones *Project Plans to be Developed with SAR*
	VAR Directives ***Project 2008-01***	**Prepare and achieve approval on the existing VAR-001 and VAR-002 Reliability Standards to be more specific in defining voltage and reactive power schedules. Consideration should be given to adding a requirement for the Reliability Coordinator to monitor and take action if reactive power falls outside identified limits.**	• **VAR-001** • **VAR-002**	• **Informal Outreach – 02/2013** • **SAR Developed – 06/2013** • **Initial Comment Period/Ballot – 07/2013** • **Recirculation Ballot – 09/2013** • **Presented to BOT – 11/2013**
	Close out one Registry Directive	**Consider whether NERC should register demand side aggregators if the loss of their load shedding capability, for reasons such as a cyber incident, would affect the reliability or operability of the BPS.**	• **A consideration of whether the Compliance Registry needs to be updated** • **A consideration of whether the definitions of Demand Response and Direct Load Control need to be added to the NERC Glossary**	• **Informal Outreach – 01/2013** • **SAR Developed – 03/2013** • **Initial Comment Period/Ballot – 03/2013** • **Recirculation Ballot – 04/2013** • **Presented to BOT – 11/2013**

Chapter 6 – Five-Year Reviews

Within the time horizon of this plan, all Version 0 standards that have not been significantly revised or retired will undergo a comprehensive review to determine what, if any, changes are needed to improve the clarity and conciseness of the standards. This will include applying the Paragraph 81 and Results-Based Standards concepts, in addition to reviewing the standards to ensure that each is technically sound given current technologies and system conditions. Several standard families will be reviewed comprehensively by the Reviews team:

- Emergency Preparedness and Operations (EOP) Standards
- Facilities Design, Connection, and Maintenance (FAC) Standards
- Interchange Scheduling and Coordination (INT) Standards
- Interconnection Reliability Operations and Coordination (IRO) Standards
- Nuclear (NUC) Standard

In addition, coordination with other standard development teams will ensure that standards due for five-year review are reviewed on or before the date that it is due for a five-year review.

Finally, the action plan in the table below reflects that the standards developers on the review team have responsibility for several on-going projects as well as a potential emerging issue (geomagnetic disturbance mitigation).

Action Plan for Five-Year Reviews Team

Priority Issue	Proposed Activity	Abstract	Deliverables	Targeted Milestones *Project Plans to be Developed with SAR*
	Project 2007-09 Generator Verification		• MOD-024 • MOD-025 • MOD-026 • MOD-027 • PRC-019 • PRC-024	• Recirculation Ballots – 01/2013 • Presented to BOT – 2/2013
2. *Reviews*	**Project 2008-12 Coordinate Interchange Standards**	**Revise the set of Coordinate Interchange standards to 1) ensure that each requirement is assigned to an owner, operator or user of the bulk power system, and not to a tool used to coordinate interchange, 2) to address the Interchange Subcommittee's concerns related to the Dynamic Transfers and Pseudo-ties, and 3) to address previously identified stakeholder comments and applicable directives from Order 693.**	Revise: • 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	• Informal outreach and SAR revised – Q1 2013 • Initial Ballot – Q2 2013 • Recirculation Ballot – Q3 2013 • Presented to BOT – 11/2013
	Project 2009-03 Emergency Operations	**Several EOP standards may be merged into a single standard. There are some requirements in IRO-001 that may be improved and merged into the new EOP standard. In addition, a comprehensive review will be conducted of the entire EOP family of standards.**	Review/Revise: • EOP-001-2b • EOP-002-3 • EOP-003-1 • EOP-004-2 (P81, RBS) • EOP-005-2 (P81, RBS) • EOP-006-2 (RBS) • EOP-008-1 (RBS) • EOP-009-1 • IRO-001-5	• Informal outreach and SMEs assembled for comprehensive review – Q1 2013 • Review results/assessment posted for industry comment – Q1 2013 • Comments reviewed; SAR revised, SDT appointed – Q2 2013 • Initial Ballot – Q2 2013 • Successive Comment Period – Q3 2013 • Recirculation Ballot – Q4 2013 • Present to BOT – 2/2014
	Project 2009-02 Real-time Reliability Monitoring and Analysis Capabilities	**Create new or revised standards to establish requirements for the monitoring and analysis capabilities provided to System Operators to support Real-time System Operations. The project will address availability parameters, performance metrics, and procedures for failure notification, maintenance coordination, and change management.**	• New Standard(s)	• Repopulate SDT – Q4 2012 • Informal outreach and review/respond comments on white paper posted in 2011 – Q2 2013 • Initial Ballot – Q3 2013 • Recirculation Ballot – Q4 2013 • Present to BOT – 2/2014

Priority Issue	Proposed Activity	Abstract	Deliverables	Targeted Milestones *Project Plans to be Developed with SAR*
	Project 2010-11 TPL Footnote 'b'	**FERC Order RM06-16-009 which required the ERO to clarify TPL-002-0, Table 1 — footnote 'b', regarding the planned or controlled interruption of electric supply where a single contingency occurs on a transmission system by June 30, 2010. The SAR provides a revision to TPL Table 1 footnote 'b' to provide clarity to industry with regard to the planned or controlled interruption of electric supply where a single contingency occurs on a transmission system. The referenced table appears in TPL-001, TPL-002, TPL-003, and TPL-004 so while the FERC Order was for TPL-002, the change is reflected in all 4 standards.**	**Revised Footnote to be included in:** • **TPL-001** • **TPL-002** • **TPL-003** • **TPL-004**	• **Successive Ballot – Q4 2012** • **Recirculation Ballot – 1/2013** • **Presented to BOT – 2/2013**
	Project 2010-17 Definition of Bulk Electric System	**This project will revise the definition of Bulk Electric System (BES) to address various Federal Energy Regulatory Commissions (FERC) concerns the definition must be modified to encompass all Elements and Facilities necessary for the reliable operation and planning of the interconnected bulk power system. These concerns have been identified in FERC Order 693 issued on March 16, 2007 and in Order 743 issued on November 18, 2010 (Order 743). The project will also consider additional modifications (beyond those established in the regulatory directives) to improve clarity, to reduce ambiguity and to establish consistency across all Regions in distinguishing between BES and non-BES Elements and Facilities.**	**Revise: Definition of *Bulk Electric System***	• **Initial Ballot – Q1 2013** • **Successive Ballot – Q2 2013** • **Recirculation Ballot – Q3 2013** • **Presented to BOT – 2/2014**

Priority Issue	Proposed Activity	Abstract	Deliverables	Targeted Milestones *Project Plans to be Developed with SAR*
	Project 2012-09 IRO Review This project may incorporate Phase 2 of Project 2006-06 Reliability Coordination.	**This project will conduct a comprehensive review of the IRO set of standards.**	**Various IRO standards**	• **Informal outreach and SMEs assembled for comprehensive review – Q1 2013** • **Review results/assessment posted for industry comment – Q1 2013** • **Comments reviewed; review results posted – Q2 2013** • **SAR developed, SDT appointed – Q2 2013** • **Initial Ballot – Q3 2012** • **Recirculation Ballot – Q4 2013** • **Presented to BOT – 2/2014**
	Project 2012-13 NUC Review	**This project will conduct a comprehensive review of the NUC-001 standard.**	**NUC-001**	• **Informal outreach and SMEs assembled for review – Q3 2013** • **Review completed – Q1 2014** **If review indicates the need:** • **SAR developed – Q1 2014** • **Initial ballot – Q3 2014** • **Recirculation ballot – Q3/4 2014** • **Presented to BOT – 11/2014**
	Project 2013-03 Geomagnetic Disturbance Mitigation Measures	**TBD**	**New or Revised Standard TBD**	• **Informal outreach – Q4 2012/Q1 2013** • **SAR Completed – Q1 2013** • **Initial Ballot (Phase 1) – Q2 2013** • **Successive Comment Period (Phase 1) – Q3 2013** • **Initial Ballot (Phase 2) – Q2 2013** • **Recirculation Ballot (Phase 1) – Q3 2013** • **Recirculation Ballot (Phase 2) – Q4 2013** • **Presented to BOT (Phase 1) – 11/2013** • **Presented to BOT (Phase 1) – 1/2014**

Priority Issue	Proposed Activity	Abstract	Deliverables	Targeted Milestones *Project Plans to be Developed with SAR*
	Project 2010-02 Connecting new facilities to the grid	**This project will ensure that all of the elements that should be addressed when a new facility is connected to the grid are included in the revised standards. In addition, a comprehensive review of FAC-001 and -002 will be done to address suggestions for improvement, possible consolidation and for requirements to be considered for retirement under Paragraph 81 submitted by stakeholders, other drafting teams, and FERC staff.**		• **Informal outreach and SAR revised – Q1 2013** • **Initial Ballot – Q2 2013** • **Recirculation Ballot – Q3 2013** • **Presented to BOT – 11/2013**

Chapter 7 – Projects and Emerging Issues

Another key focus is the completion of current standard development in an efficient and timely manner. It is imperative that these projects be completed to resolve the identified reliability concerns that created the need for the projects. The Standards Committee and NERC staff has dedicated resources to address the projects that were included in the 2013-2015 RSDP to develop a coordinated plan to bring these projects to completion. Completion of these projects will include application of the Results-Based Standards drafting concepts and Paragraph 81 concepts. In the event that a given project is sufficiently close to completion and applying these concepts would delay completion, the standard(s) involved would be scheduled for further review in a subsequent project to determine if additional modifications are suggested.

Action Plan for Projects Team

Priority Issue	Project Number	Project Name	Abstract	Deliverables	Targeted Milestones *Project Plans to be Developed with SAR*
Completion of Projects/Emerging Issues	2007-02	Operating Personnel Communication Protocols	This standard will require the use of specific communication protocols, especially for communications during alerts and emergencies. The standard will be applicable to transmission operators, balancing authorities, reliability coordinators, generator operators and distribution providers. Requirements will include protocols for communicating changes to real-time operating states and protocols for issuing and responding to Operating Instructions.	• COM-003	• Recirculation Ballot – 01/2013 • Presented to BOT – 02/2013
	2007-06	System Protection Coordination	Review PRC-001-1 to assure that Protection System application and performance issues are coordinated among all related entities. It will ensure the applicable entities within the standard correctly reflect the functional responsibilities, as described in the NERC Functional Model. The project will also incorporate other general improvements, address directives received from ERO regulatory authorities, and consider the observations and recommendations developed by the NERC SPCTF.	• PRC-001 • PRC-027	• Recirculation Ballot – 02/2013 • Presented to BOT – 05/2013

	2007-11	**Disturbance Monitoring**	**This project establishes and clarifies requirements for the installation of Disturbance Monitoring Equipment (DME) and reporting of disturbance data to facilitate analyses of events and verify system models.**	• **PRC-002** • **PRC-018**	• **Initial Comment Period/Ballot – 06/2013** • **Recirculation Ballot – 09/2013** • **Presented to BOT – 11/2013**
	2007-17.2	**Protection System Maintenance and Testing**	**This project will modify the PRC-005 standard to ensure that reclosing relays are maintained and tested.**	• **PRC-005**	• **Initial Comment Period/Ballot – 07/2013** • **Recirculation Ballot – 09/2013** • **Presented to BOT – 11/2013**
	2010-05.1	**Phase 1 of Protection Systems: Misoperations**	**This project addresses a key element for Bulk Electric System (BES) reliability: the correct performance of Protection Systems. Monitoring BES Protection System events to identify and correct the root causes of Misoperations will improve overall Protection System performance.**	• **PRC-003** • **PRC-004**	• **Successive Ballot – 02/2013** • **Recirculation Ballot – 04/2013** • **Presented to BOT – 05/2013**
	2010-13.2	**Generator Relay Loadability**	**The project will draft a new standard to address generator relay loadability.**	• **PRC-025**	• **Initial Comment Period/Ballot – 01/2013** • **Successive Ballot – 04/2013** • **Recirculation Ballot – 06/2013** • **Presented to BOT – 8/2013**
	2013-01	**Cold Weather Preparedness**	**To require GO/GOPs to report generating unit capabilities based on anticipated winter weather using criteria developed by the standard drafting team using stakeholder input. GO/GOPs must ensure winter weather preparation plans are created, maintained, implemented and monitored as appropriate to help ensure generating units can operate to the criteria developed above. The plans shall include appropriate annual winterization measures.**	• **New Standard**	• **SAR Developed – 02/2013** • **Initial Comment Period/Ballot – 07/2013** • **Recirculation Ballot – 09/2013** • **Presented to BOT – 11/2013**

	2008-02	**Undervoltage Load Shedding**	**To improve the existing standards on Under Voltage Load Shedding (UVLS) to include criteria for Under Voltage Load Shedding programs such that the programs work as intended to shed load when needed and prevent voltage collapse and voltage instability in the Bulk Electric System.**	• **PRC-010** • **PRC-022**	• **Initial Comment Period/Ballot – 09/2013** • **Recirculation Ballot – 12/2013** • **Presented to BOT – 02/2014**
	2010-16	**Definition of System Operator**	**This project proposes revising the existing definition of System Operator to remove the inclusion of "Generator Operator." This change would avoid the confusion caused by the use of the term "System Operator" in reference to the real-time operating personnel who work for Generator Operators. Inaccurate definitions results in misconception of responsibilities and expectations which can negatively impact reliability**	• **Revised definition**	• **Initial Comment Period/Ballot – 03/2013** • **Successive Ballot – 05/2013** • **Recirculation Ballot – 06/2013** • **Presented to BOT – 8/2013**
	2010-14.2	**Phase 2 of Balancing Authority Reliability-based Control: Time Error, AGC, and Inadvertent**	**This project will consider the Time Error Correction, AGC, and Inadvertent Accounting standards to determine what changes, if any, are necessary to ensure the standards are clear and unambiguous.** *This project will be reviewed to determine if it is still necessary, and if so, what the appropriate scope of the project is.*	**Revise:** • **BAL-004-0** • **BAL-005-0.1b** • **BAL-006-2**	• **Review of Project – Q2 2013** • **Revised scope, SAR – Q3 2013**

Chapter 8 – Conclusion

This ambitious but achievable plan represents several significant shifts from NERC's prior year Reliability Standards Development Plan. Many of the projects that were slated for work in future years have been moved up, while other projects have been proposed as candidates for consolidation or, in some cases, dismissal. The goal of this three-year plan is to transition from the current set of reliability standards to a world class body of reliability standards that are clear, concise, and will ensure the reliability of the bulk power system in North America.

Successful execution of the 2013-2015 RSDP will require a concerted effort by NERC and industry stakeholders, and a reliance on the standards development process as an enabler of success. NERC and the NERC Standards Committee are committed to meet the goals of this plan.

Appendix 1 – Research

NERC standards staff and the SC are working with the NERC technical committees for the completion of technical research prepared for the below projects. The chart includes an anticipated start date for the technical committees to be able to begin the research.

Committee	Project	2012-2014 RSDP Estimated Research Start
Planning Committee	Oder 754 Data Request	Complete
Planning Committee	Project 2007-12 Frequency Response (ACTIVE)	Complete
Planning Committee	Project 2009-07 Reliability of Protection Systems	Data collection begins in Q3 2013 and will be fully collected by Sept 2014
Planning Committee	Project 2012-06 Generator Capabilities	Q1 2013
Operating Committee	Project 2009-04 Phasor Measurements	Q1 2014
Planning Committee	Project 2012-04 Protection System Commissioning Testing	Q1 2012
Operating Committee	Project 2012-01 Equipment Monitoring and Diagnostic Devices	Q2 2013
Operating Committee	Project 2010-02 Connecting New Facilities to the Grid	Q2 2015
Operating Committee	Project 2010-01 Support Personnel Training	Q3 2012
Planning Committee (SAMS with support from Model Validation WG)	Project 2010-03 Modeling Data	complete
Planning Committee (RAS)	Project 2010-04 Demand Data	Q1 2013
Planning Committee	Project 2010-05.2 Phase 2 of Protections Systems: SPS and RAS	Q4 2012
Planning Committee (SPCS)	Project 2010-13-3 Phase 3 of Relay Loadability: Stable Power Swings	Q4 2014
Planning Committee	Project 2010-17 Definition of BES Phase 2(ACTIVE)	Q4 2012

Appendix 2 – Assignment of Projects or Standards

	Factors					Assignment		
Standard Number for FERC Approved Stds	Directive	Guidance	Existing/ Future Std Projects	P81	Five Year Review	Directives Team	5-Year Review Team	Projects and Emerging Issues Team
BAL-001-0.1a			X	X				X
BAL-002-0	x		X					X
BAL-002-1								X
BAL-STD-002-0								
BAL-003-0.1b	x		X					X
BAL-004-0	X		X	X			X	
BAL-004-WECC-01	X	X						
BAL-005-0.1b	X	X	X	X	X		X	
BAL-006-2	X		X	X	X		X	
BAL-502-RFC-02								
CIP V5 Standards			X	X				
COM-001-1.1	X		X	X				
COM-002-2		X	X					
COM-003-1			X					
EOP-001-0b	X	X	X	X			X	
EOP-001-2b			X				X	
EOP-002-3	X		X	X			X	
EOP-003-1		X	X				X	
EOP-004-1		X		X			X	
EOP-005-1				X			X	
EOP-005-2				X			X	
EOP-006-1							X	
EOP-006-2							X	
EOP-008-0				X			X	
EOP-008-1				X			X	
EOP-009-0							X	
FAC-001-0			X	X			X	
FAC-002-1	X	X	X	X			X	
FAC-003-1				X		X		
FAC-008-1				X				
FAC-008-3				X				
FAC-009-1								
FAC-010-2.1				X	X			
FAC-011-2				X	X			
FAC-012-1								
FAC-013-1				X	X			
FAC-013-2								
FAC-014-2					X			

	Factors					Assignment			
Standard Number for FERC Approved Stds	Directive	Guidance	Existing/ Future Std Projects	P81	Five Year Review	Directives Team	5-Year Review Team	Projects and Emerging Issues Team	
FAC-501-WECC-1									
INT-001-3		X	X	X	X		X		
INT-004-2			X	X	X		X		
INT-005-3			X	X	X		X		
INT-006-3	X		X	X			X		
INT-007-1			X	X			X		
INT-008-3		X	X	X			X		
INT-009-1	x		X	X			X		
INT-010-1	x		X	X			X		
IRO-001-1.1		X	X	X			X		
IRO-002-2		X		X			X		
IRO-003-2	x		X				X		
IRO-004-2		X		X			X		
IRO-005-3a	X			X			X		
IRO-006-5		X			X		x		
IRO-006-EAST-1									
IRO-006-WECC-1									
IRO-008-1					X		X		
IRO-009-1					X		X		
IRO-010-1a				X	X		X		
IRO-014-1				X			X		
IRO-015-1				X			X		
IRO-016-1							X		
MOD-001-1a	x	X	X	X	X	X			
MOD-004-1	x		X	X	X	X			
MOD-008-1			X	X	X	X			
MOD-010-0	x		X	X		X			
MOD-012-0	x		X	X		X			
MOD-016-1.1	X	X	X	X		X			
MOD-017-0.1	X		X	X		X			
MOD-018-0	x		X	x		X			
MOD-019-0.1	x	X	X	X		X			
MOD-020-0	X		X	X		X			
MOD-021-1	x	X	X	X		X			
MOD-028-1	X	X	X	X	X	X			
MOD-029-1a	X		X	X	X	X			
MOD-030-2	X		X	X	X	X			
NUC-001-2					X				
PER-001-0.1				X					
PER-002-0	X	X				X			
PER-003-0									
PER-004-1									
PER-004-2									
PER-005-1	X				X	X			
PRC-001-1	X		X					X	
PRC-002-NPCC-01								X	

	Factors					Assignment		
Standard Number for FERC Approved Stds	**Directive**	**Guidance**	**Existing/ Future Std Projects**	**P81**	**Five Year Review**	**Directives Team**	**5-Year Review Team**	**Projects and Emerging Issues Team**
PRC-004-1a								X
PRC-004-2a		X	X					X
PRC-004-WECC-1				X				
PRC-005-1a	X			X				X
PRC-005-1b	X			X				X
PRC-007-0				X				X
PRC-008-0				X				X
PRC-009-0				X				X
PRC-010-0	X		X	X				X
PRC-011-0				X				X
PRC-015-0			X	X				X
PRC-016-0.1			X	X				X
PRC-017-0				X				X
PRC-018-1			X	X				X
PRC-021-1				X				X
PRC-021-1								
PRC-022-1	X		X	X				X
PRC-023-1	X	X		X				X
TOP-001-1a	X			X			X	
TOP-002-2b	X			X			X	
TOP-003-1				X			X	
TOP-004-2							X	
TOP-005-2a				X	X		X	
TOP-006-2				X			X	
TOP-007-WECC-1							X	
TOP-008-1				X			X	
TPL-001-0.1			X	X				
TPL-002-0b		X	X	X				
TPL-003-0a				X				
TPL-004-0				X				
TPL-005			X					
VAR-001-2	X	X	X	X	X	X		
VAR-002-1.1b	X		X	X		X		
VAR-002-WECC-1								
Non FERC-approved								
FAC-005-WECC-1 AND PRC-004-WECC-1	X							
Glossary	X	X				X		
All MODs	X					X		
MOD-013	X		X			X		
MOD-014	X		X			X		
MOD-015	X		X			X		
MOD-024	X	X				X		
MOD-025	X	X				X		
PRC-002	X		X					X

	Factors						Assignment		
Standard Number for FERC Approved Stds	**Directive**	**Guidance**	**Existing/ Future Std Projects**	**P81**	**Five Year Review**		**Directives Team**	**5-Year Review Team**	**Projects and Emerging Issues Team**
PRC-003	X								X
PRC-006	X			X					X
PRC-012	X		X						X
PRC-013	X		X						X
PRC-014		X	X						X
PRC-003 WECC				X					X
Existing Project for New Stds, future projects, emerging issues									
MOD-025-2, MOD-026-1, MOD-027-1 PRC-019-1, and PRC-024-1			**X**						X
EOP-004-2			**X**						
PRC-025, phase 2			**X**						X
IRO-006-WECC-2			X						X
COM-003			**X**						X
GMD			X					X	
BES definition			**X**					X	
Glossary	X		X				X		
BAL-012			**X**						X
BAL-013			**X**						X
MOD-011			X				X		

Appendix 3 – Project Summaries

The following are detailed summaries of the projects discussed earlier within this plan.

IN DEVELOPMENT
PROJECTS TEAM

Project 2007-02 Operating Personnel Communication Protocols

Summary:

This standard will require the use of specific communication protocols, especially for communications during alerts and emergencies. The standard will be applicable to transmission operators, balancing authorities, reliability coordinators, generator operators and distribution providers. Requirements will include protocols for communicating changes to real-time operating states and protocols for issuing and responding to operating directives.

Standards affected: COM-003

IN DEVELOPMENT
PROJECTS TEAM

Project 2007-06 System Protection Coordination

Summary:

This project is reviewing PRC-001-1 to assure that Protection System application and performance issues are coordinated among all related entities. It will ensure the applicable entities within the standard correctly reflect the functional responsibilities, as described in the NERC Functional Model. The project will also incorporate other general improvements, address directives received from ERO regulatory authorities, and consider the observations and recommendations developed by the NERC Systems Protection and Controls Task Force (SPCTF). As necessary, the project will coordinate the transfer of monitoring-related requirements to other standards as appropriate through coordination with project 2006-06 Reliability Coordination.

Standards affected: PRC-001, PRC-027 (New)

IN DEVELOPMENT
PROJECTS TEAM

Project 2007-09 Generator Verification

Summary:

This project will create or modify standards to ensure that generators will not trip off-line during specified voltage and frequency excursions or as a result of improper coordination between generator protective relays and generator voltage regulator controls and limit functions. It also will ensure that generator models accurately reflect the generator's capabilities and operating characteristics.

Standards affected: MOD-024, MOD-025, MOD-026, MOD-027, PRC-019, PRC-024

IN DEVELOPMENT
PROJECTS TEAM

Project 2007-11 Disturbance Monitoring

Summary:

This project establishes and clarifies requirements for the installation of Disturbance Monitoring Equipment (DME) and reporting of disturbance data to facilitate analyses of events and verify system models. The project will review PRC-002 and each of the current regional programs developed in accordance with that standard, including any other associated programs and/or requirements related to or contained within the disturbance monitoring program documentation. The project will then determine which requirements should be continent-wide requirements and which requirements should be included in regional standards.

Standards affected: PRC-002, PRC-018

IN DEVELOPMENT
PROJECTS/DIRECTIVES TEAM

Project 2007-12 Frequency Response

Summary:

Purpose:
This project will modify the BAL-003 Standard to require sufficient Frequency Response from the Balancing Authority to maintain Interconnection Frequency within predefined bounds. It also will ensure the standard provides consistent methods for measuring Frequency Response and determining the Frequency Bias Setting.

Standards affected: BAL-003

IN DEVELOPMENT
PROJECTS TEAM

Project 2007-17.2 Protection System Maintenance and Testing

Summary:

This project will modify the PRC-005 standard to ensure that reclosing relays are maintained and tested.

Standards affected: PRC-005

IN DEVELOPMENT
DIRECTIVES TEAM

Project 2008-01 Voltage and Reactive Planning and Control

Summary:

This project will revise the VAR Standards to require that appropriate functional entities develop and coordinate voltage and reactive planning and operating criteria to ensure that there are sufficient reactive resources, and voltage and reactive margins, to manage the risk of voltage instability. The project will also address the FERC directives in Order 693 associated with these standards. Review and modifications to the existing VAR standards will also consider the Transmission Issues Subcommittee's "Reactive Support & Control Whitepaper" dated 05/18/2009.

Standards affected: VAR-001, VAR-002

IN DEVELOPMENT
PROJECTS TEAM

Project 2008-02 Undervoltage Load Shedding

Summary:

This project will improve the existing standards on Under Voltage Load Shedding (UVLS) to ensure that load is shed when needed to prevent voltage collapse and voltage instability in the bulk electric system. The existing standards will be consolidated and specific criteria for UVLS programs and assessments of those UVLS programs should be added. 'Fill-in-the-blank' elements should be eliminated, and concerns related to Fault-Induced Delayed Voltage Recovery will be reviewed and addressed.

Standards affected: PRC-010, PRC-022

IN DEVELOPMENT
5-YEAR REVIEW TEAM

Project 2008-12 Coordinate Interchange Standards

Summary:

This project will comprehensively review and revise the set of Coordinate Interchange standards to ensure that each requirement is assigned to an owner, operator, or user of the bulk power system, and not to a tool used to coordinate interchange; to address the Interchange Subcommittee concerns related to the Dynamic Transfers and Pseudo-ties; to address a NAESB concern about inter-BA tagging, and to address other suggestions for improvement, possible consolidation and for requirements to be considered for retirement under Paragraph 81 submitted by stakeholders, other drafting teams, and FERC staff.

Standards affected: INT-001, INT-003, INT-004, INT-005, INT-006, INT-007, INT-008, INT-009, INT-010

IN DEVELOPMENT
5-YEAR REVIEW TEAM

Project 2009-02 Real-time Reliability Monitoring and Analysis Capabilities

Summary:

This project will create new or revised standards to establish requirements for the monitoring and analysis capabilities provided to System Operators to support Real-time System Operations. The project will address availability parameters, performance metrics, and procedures for failure notification, maintenance coordination, and change management.

Standards affected: New

IN DEVELOPMENT
5-YEAR REVIEW TEAM

Project 2009-03 Emergency Operations

Summary:

This project will comprehensively review and revise the set of EOP standards to ensure the requirements are clear and unambiguous. Many of the requirements in this set of standards were translated from Operating Policies as part of the Version 0 process and the standards are due for a comprehensive review. Suggestions for improvement, possible consolidation and for requirements to be considered for retirement under Paragraph 81 have been submitted by stakeholders, other drafting teams, and FERC staff.

Standards affected: EOP-001, EOP-002, EOP-003, EOP-004, EOP-005, EOP-006, EOP-008, EOP-009, IRO-001

IN DEVELOPMENT
RESEARCH REQUESTED
PROJECTS TEAM

Project 2009-04 Phasor Measurements

Summary:

This project will review several industry studies to determine if there should be phasor requirements developed for a NERC standard. This project is related to the North American Synchro-Phasor Initiative, and supports a blackout recommendation.

Standards affected: New

Requested Deliverable from the Operating Committee:

The Operating Committee has been asked to provide an analysis of the industry studies that have been performed to determine if there should be phasor requirements developed for a NERC standard.

CANDIDATE FOR DISMISSAL

Project 2009-05 Resource Adequacy Assessments

Summary:

This project will implement certain recommendations related to resource adequacy from the *Resource and Transmission Adequacy Task Force (RTATF) Report* and the *Gas/Electricity Interdependency Task Force Report,* approved by the NERC Board on June 15, 2004. The project will create a standard with requirements to perform resource adequacy assessments, using metrics that take into account various factors (including, but not limited to, fuel deliverability). The standard would also make the results of the assessments available to the industry, NERC, and appropriate regulatory agencies.

Standards affected: New

Status: This project will be reviewed to determine if changes to existing standards since the creation of the SAR have made this project obsolete.

IN DEVELOPMENT
RESEARCH REQUESTED
PROJECTS TEAM

Project 2009-07 Reliability of Protection Systems

Summary:

This project will ensure Protection Systems are designed and installed with redundancy where appropriate, such that if there were a failure to a specified component of that protection system, the failure would not prevent meeting the BES performance identified in the TPL standards.

Standards affected: New

Requested Deliverable from the Planning Committee:

The Planning Committee has been asked to provide a report providing the conditions under which Protection Systems must be designed and installed with redundancy, such that if there were a failure to a specified component of that protection system, the failure would not prevent meeting the BES performance identified in the TPL standards, taking into account the data that is being collected by NERC under the FERC Order 754 Data Request project.

IN DEVELOPMENT
RESEARCH REQUESTED
PROJECTS TEAM

Project 2010-01 Support Personnel Training

Summary:

This project will develop a standard that requires the use of a systematic approach to determining training needs of generator operators and operations planning and support staff with a direct impact on the reliable operations of the bulk power system.

Standards affected: New

Requested Deliverable from the Operating Committee:

The Operating Committee has been asked to provide an analysis of whether the following recommendation from the August 14, 2003 Blackout Report are still valid. If so, determine whether the development of a NERC standard is necessary to meet the recommendations.

> *NERC should require training for the planning staff at control areas and reliability coordinators concerning power system characteristics and load, VAR, and voltage limits, to enable them to develop rules for operating staff to follow.*
>
> *NERC should require control areas and reliability coordinators to train grid operators, IT support personnel, and their supervisors to recognize and respond to abnormal automation system activity.*

IN DEVELOPMENT
RESEARCH REQUESTED
5-YEAR REVIEW TEAM

Project 2010-02 Connecting New Facilities to the Grid

Summary:

This project will ensure that all of the elements that should be addressed when a new facility is connected to the grid are included in the revised standards. In addition, a comprehensive review of FAC-001 and -002 will be done to address suggestions for improvement, possible consolidation and for requirements to be considered for retirement under Paragraph 81 submitted by stakeholders, other drafting teams, and FERC staff.

Standards affected: FAC-001, FAC-002

Requested Deliverable from the Planning Committee:

The Planning Committee has been asked to provide the elements that should be addressed in revised FAC-001 and/or FAC-002 when a new facility is connected to the grid.

IN DEVELOPMENT
RESEARCH REQUESTED
DIRECTIVES TEAM

Project 2010-03 Modeling Data

Summary:

This project will consider merging, upgrading and expanding existing requirements for entities to provide data used to model the bulk electric system. This project is related the Modeling Initiative, and supports a blackout recommendation.

Standards affected: MOD-010, MOD-011, MOD-012, MOD-013, MOD-014, MOD-015, PRC-013, PRC-015

Requested Deliverable from the Planning Committee:

The Planning Committee has been asked to provide a technical report providing an analysis of merging, upgrading and expanding existing requirements for entities to provide data used to model the bulk electric system. The technical report should revisit the industry practices on modeling in light of the Southwest blackout and design a framework for modeling.

IN DEVELOPMENT
RESEARCH REQUESTED
DIRECTIVES TEAM

Project 2010-04 Demand Data

Summary:

This project will consolidate MOD-016 through MOD-020 into a single standard, with MOD-021 remaining as a separate standard. Requirements will be made be more specific to clearly identify the format for providing data, and modifications will made in support if previously received industry comments and regulatory directives.

Standards affected: MOD-016, MOD-017, MOD-018, MOD-019, MOD-020, MOD-021

Requested Deliverable from the Planning Committee:

The Planning Committee has been asked to provide an analysis of which requirements should be modified to be more specific and clearly identify the format for providing demand data. The technical report should provide a design for the consolidation of the MOD standards, taking into consideration the EIA data collection efforts.

IN DEVELOPMENT
PROJECTS TEAM

Project 2010-05.1 Phase 1 of Protection Systems: Misoperations

Summary:

This project addresses a key element for Bulk Electric System (BES) reliability: the correct performance of Protection Systems. Monitoring BES Protection System events to identify and correct the root causes of Misoperations will improve overall Protection System performance. The project will revise the definition of Misoperation and redraft the standard to be more clear and unambiguous.

Standards affected: PRC-003, PRC-004

IN DEVELOPMENT
RESEARCH REQUESTED
PROJECTS TEAM

Project 2010-05.2 Phase 2 of Protection Systems: SPS and RAS

Summary:

This project will moodily the current standards and definitions related to SPS/RAS Misoperations to support a good metric for measurement of Protection System performance and to ensure the reliability of the bulk power system. This project is related to the System Protection Initiative.

Standards affected: PRC-012, PRC-014, PRC-016.

Requested Deliverable from the Planning Committee:

The Planning Committee has been asked to provide an analysis of what would constitute a good metric or metrics for the measurement of Protection System performance as related to SPS/RAS misoperations.

IN DEVELOPMENT
PROJECTS TEAM

Project 2010-08 Functional Glossary Model Revisions

Summary:

This project will ensure the definitions of various functional entities between the Functional Model, the NERC Glossary of Terms, and the NERC Statement of Compliance Registration Criteria is consistent.

Standards affected: NERC *Glossary of Terms*

IN DEVELOPMENT
5-YEAR REVIEW TEAM

Project 2010-11 TPL Table 1, Footnote B

Summary:

This project addresses the requirement in FERC Order RM06-16-009 to clarify TPL-002-0, Table 1 — footnote 'b', regarding the planned or controlled interruption of electric supply where a single contingency occurs on a transmission system by June 30, 2010.

Standards affected: TPL-001, TPL-002, TPL-003, and TPL-004

IN DEVELOPMENT
PROJECTS TEAM

Project 2010-13.2 Phase 2 of Relay Loadability: Generation

Summary:

This project is being created in response to directives included in FERC Order 733. The project will draft a new standard to address generator relay loadability.

Standards affected: PRC-025

IN DEVELOPMENT
RESEARCH REQUESTED
PROJECTS TEAM

Project 2010-13.3 Phase 3 of Relay Loadability: Stable Power Swings

Summary:

This project is being created in response to directives includes in FERC Order 733. The project will draft a new standard to address protective relay operations due to power swings.

Standards affected: New

Requested Deliverable from the Planning Committee:

The Planning Committee has been asked to provide specifications of what is necessary to address protective relay operations due to power swings.

IN DEVELOPMENT
PROJECTS TEAM

Project 2010-14.1 Phase 1 of Balancing Authority Reliability-based Controls: Reserves

Summary:

This project will review the standard related to Control Performance and Disturbance control, and propose modifications or new standards as necessary. This project includes the testing and analysis of the new Balancing Authority ACE Limit (BAAL) metric, as well as the development of a continent-wide reserve policy to support BAL-01, BAL-002, and BAL-003.

Standards affected: BAL-001, BAL-002, BAL-012, BAL-013

CANDIDATE FOR DISMISSAL

Project 2010-14.2 Project 2010-14.2 Phase 2 of Balancing Authority Reliability-based Controls: Time Error, AGC, and Inadvertent

Summary:

This project will consider the Time Error Correction standard, AGC, standard, and Inadvertent Accounting standard to determine what changes, if any, are necessary to ensure the standards are clear and unambiguous. In some cases, the standard may no longer be necessary.

Standards affected: BAL-004, BAL-005, BAL-006

Status: This project will be reviewed to determine if changes to existing standards since the creation of the SAR have made this project obsolete.

IN DEVELOPMENT
PROJECTS TEAM

Project 2010-16 Definition of System Operator

Summary:

This project will remove the 'Generator Operator' from the current definition of System Operator. This will more accurately establish the responsibilities and expectations of the Generator Operator consistent with the current manner in which the Bulk Electric System is operated.

Standards affected: TBD

IN DEVELOPMENT
5-YEAR REVIEW TEAM

Project 2010-17 Definition of Bulk Electric System

Summary:

This project will revise the definition of Bulk Electric System (BES) to address various Federal Energy Regulatory Commissions (FERC) concerns the definition must be modified to encompass all Elements and Facilities necessary for the reliable operation and planning of the interconnected bulk power system. These concerns have been identified in FERC Order 693 issued on March 16, 2007 and in Order 743 issued on November 18, 2010 (Order 743). The project will also consider additional modifications (beyond those established in the regulatory directives) to improve clarity, to reduce ambiguity and to establish consistency across all Regions in distinguishing between BES and non-BES Elements and Facilities.

Standards affected: Definition of *Bulk Electric System*

IN DEVELOPMENT
RESEARCH REQUESTED
PROJECTS TEAM

Project 2012-01 Equipment Monitoring and Diagnostic Devices

Summary:

This project will consider the development of reliability standards for the application of major equipment monitoring and diagnostic devices and procedures, with the intent of identifying potential equipment failures prior to their occurrence. This will provide more time to address failing systems and avoid or minimize long lead times.

Standards affected: New

Requested Deliverable from the Operating Committee:

The Operating Committee has been asked to provide an analysis of the major equipment monitoring and diagnostic devices and procedures necessary to identify potential equipment failures prior to their occurrence.

CANDIDATE FOR DISMISSAL

Project 2012-02 Physical Protection

Summary:

This project will develop standards for the safety and protection of essential equipment, buildings, and people located in power generation, transmission, or distribution system locations in order to mitigate the associated reliability risks to the bulk power system.

Standards affected: New

Status: This project will be submitted to the RISC to be reviewed to determine if a NERC standard is necessary to address the perceived need.

CANDIDATE FOR DISMISSAL

Project 2012-03 PRC-004 VSLs

Summary:

This project will address a problem identified in the VSLs of PRC-004. Currently, the VSLs do not address the case where a Corrective Acton Plan was developed or documented, but not fully implemented.

Standards affected: PRC-004

Status: This project will be incorporated into the existing Project 2010-05.1, which is revising PRC-004.

IN DEVELOPMENT
RESEARCH REQUESTED
PROJECTS TEAM

Project 2012-04 Protection System Commissioning Testing

Summary:

This project will address a gap in reliability related to protection systems by creating a standard that requires commissioning testing. Improper or inadequate commissioning testing practices are a common cause of protection system Misoperation. However, the current set of approved NERC reliability standards does not address the testing of protection system equipment *before* that equipment is placed into initial service. Creating a commissioning standard would also enhance the effectiveness of the mandatory auditing program.

Standards affected: New

Requested Deliverable from the Planning Committee:

The Planning Committee has been asked to provide specifications of what is necessary for protection systems commissioning testing.

IN DEVELOPMENT
DIRECTIVES TEAM

Project 2012-05 ATC Revisions - Order 729

Summary:

This project will respond to the remaining directives in Order 729.

Standards affected: MOD-001, MOD-004, MOD-008, MOD-028, MOD-029, MOD-030

Status: This is a new project, which will require SAR development. It is estimated this project will start in Q3 2014 and complete in Q1 2016.

IN DEVELOPMENT
RESEARCH REQUESTED
PROJECTS TEAM

Project 2012-06 Generator Capabilities

Summary: This project will develop standards to ensure generator performance. The project should consider requirements that specify governor droop, frequency response, and reactive response.

Standards affected: New

Requested Deliverable from the Planning Committee:

The Planning Committee has been asked to provide specifications of what is necessary for governor droop, frequency response for individual units, and reactive response.

CANDIDATE FOR DISMISSAL

Project 2012-07 Obsolescence Review

Summary:

This project will create a standard that requires Generator and Transmission Owners periodically review their control and protection systems to identity and electronic, electrical, or mechanical devices that have become obsolete.

Standards affected: New

Status: This project will be submitted to the RISC to be reviewed to determine if a NERC standard is necessary to address the perceived need.

IN DEVELOPMENT
DIRECTIVES TEAM

Project 2012-08 Glossary Updates

Summary: This project will respond to FERC directives to either create or modify the following definitions: Transmission Operator, Generator Operator, Bulk Power System, Reliable Operation, and Reliability Standard.

Standards affected: TBD

IN DEVELOPMENT
5-YEAR REVIEW TEAM

Project 2012-09 IRO Review

Summary: This project will perform the five-year review of several IRO standards, pursuant to NERC's Rules of Procedure.

Standards affected: IRO-006, IRO-006-EAST, IRO-008, IRO-009, and IRO-010

IN DEVELOPMENT
5-YEAR REVIEW TEAM

Project 2012-11 FAC Review

Summary: This project will perform the five-year review of several FAC standards, pursuant to NERC's Rules of Procedure.

Standards affected: FAC-010, FAC-011, FAC-014

IN DEVELOPMENT
DIRECTIVES TEAM

Project 2012-12 PER Review

Summary: This project will perform the five-year review of several PER standards, pursuant to NERC's Rules of Procedure.

Standards affected: PER-003, PER-004,

IN DEVELOPMENT
5-YEAR REVIEW TEAM

Project 2012-13 NUC Review

Summary: This project will perform the five-year review of the NUC standard, pursuant to NERC's Rules of Procedure.

Standards affected: NUC-001

CANDIDATE FOR DISMISSAL

Project 2012-14 Risk Analysis

Summary: This project will develop a standard that requires entities to have and maintain a checklist of potential threats to the power system that must be addressed by each TOP/BA. The checklist would include things like GMD, voltage collapse, and other extreme events.

Standards affected: New

Status: This project will be submitted to the RISC to be reviewed to determine if a NERC standard is necessary to address the perceived need.

IN DEVELOPMENT
PROJECTS TEAM

Project 2012-15 Flow Limited Paths

Summary: The MOD-029 standard includes a provision that, if left uncorrected, could in certain scenarios result in significantly over-conservative ATC values being calculated. This project will address this problem.

Standards affected: MOD-029

IN DEVELOPMENT
PROJECTS TEAM

Project 2013-01 Cold Weather Preparedness

Summary: To require GO/GOPs to report generating unit capabilities based on anticipated winter weather using criteria developed by the standard drafting team using stakeholder input. GO/GOPs must ensure winter weather preparation plans are created, maintained, implemented and monitored as appropriate to help ensure generating units can operate to the criteria developed above. The plans shall include appropriate annual winterization measures.

Standards affected: TBD

IN DEVELOPMENT
5-YEAR REVIEW TEAM

Project 2013-02 Paragraph 81

Summary: The purpose of the project is to retire or modify FERC-approved Reliability Standard requirements that as FERC noted in its March 15, 2012 Order, "provide little protection to the reliable operations of the BES", are redundant or unnecessary, or to retire or modify a FERC-approved Reliability Standard requirement to increase the efficiency of the ERO's compliance programs.

Standards affected: TBD

CANDIDATE FOR 2013
5-YEAR REVIEW TEAM

Project 2013-03 Geomagnetic Disturbance Mitigation

Summary: If FERC directs a standard or standards to be developed, a project will be initiated.

Standards affected: TBD