

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Standard Processes Manual Revisions: SCPS White Papers for Background Information

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RELIABILITY | ACCOUNTABILITY



3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

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Introduction

Background

At its February 9, 2012 meeting, the NERC Board of Trustees (BOT) requested the assistance of the NERC 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 BOT members, the NERC CEO, and the SC Chair – the group collectively known as the Standards Process Input Group (SPIG) – to join with them as participants in developing recommendations to improve the standards development process in the following key areas:

- 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)
- Standards project management and workflow
- Formal balloting and commenting

To help ensure that the SPIG focused its efforts on the most important areas for improvement, the group began its work by gathering input from subject matter experts, including the regions, the MRC, standard drafting team leaders, NERC staff, and other stakeholders. This input was collected through a series of interviews, supplemented by a formal survey.

Based on that input, the SPIG produced a document with five recommendations to modify the way NERC develops Reliability Standards and other solutions intended to improve the priority, product, and process of standards development:

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 recommendations also aim to strengthen consensus building, first on the need for a standard, and then on the requirements themselves.

These recommendations were presented to the BOT and approved on May 9, 2012, and the SC was specifically charged with addressing SPIG Recommendations 1, 4, and 5. The SC has organized this effort by leveraging each of its subcommittees, the Process Subcommittee (SCPS) and the Communications and Planning Subcommittee (SCCPS), to work in parallel on developing proposed revisions and conducting outreach to industry stakeholders to ensure that all interested stakeholders have an opportunity to provide their input.

SCPS Sub-Teams, Proposed Revisions to the Standard Processes Manual

Since May, 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). These sub-teams have focused on changes in the following categories based on the SPIG recommendations:

- Sub-team 1: Analysis of American National Standards Institute requirements and streamlining commenting and balloting
- Sub-team 2: Essential elements of a standard (elimination of measures, VRFs, and VSLs)
- Sub-team 3: Options for handling 'no' votes to ensure drafting teams have the information they need to perform their work
- Sub-team 4: Cost Effective Analysis Process

The proposed revisions from these sub-teams are included in the posted redline version of the SPM, and the SCPS is looking forward to industry feedback on its work. To support the proposed revisions, each sub-team developed a white paper to document its research and rationale for its revisions. Those white papers are included herein.

In sum, the proposed revisions include provisions for:

- Revised drafting team composition to incorporate SPIG recommendation to include lawyers and compliance experts; incorporated SPIG recommendation that drafting teams participate in developing RSAWs and compliance elements.
- Elimination of VRFs/VSLs and incorporation of Measures into RSAWs
- A streamlined standards development process, including:
 - Elimination of the 30 day comment period;
 - Providing for summary responses for comments. Instead of requiring written responses to each individual comment, drafting teams will have the flexibility to respond in summary form. However, the summaries must address each of the issues raised;
 - Elimination of negative votes without comments and negative votes with unrelated comments in the calculation of consensus;
 - Provisions to allow for quality reviews to be conducted in parallel with standard development
- Incorporation of a waiver provision to allow for modifications to the standards development process for good cause.

Sub-team 1 White Paper: Analysis of ANSI Requirements and Streamlining of Commenting and Balloting

Sub-team 1 performed a comparative review of the specific steps in standards development between the existing NERC standard development process and the ANSI requirements for standards development. Also included in the review were the process requirements of the North American Energy Standards Board (NAESB) and the National Electrical Manufacturers Associations (NEMA), other standard developers that follow the ANSI process. The sub-team wanted to review how other companies that maintain ANSI accreditation have implemented the process to identify any efficiencies that might be acceptable to the NERC process, but the sub-team did not develop any specific recommendations based on the review of these companies' process.

The sub-team addressed the following aspects of the NERC standards development process in its review:

- Project Initiation
- Comment Periods
- Consideration of Views and Objections
- Successive Balloting
- Weighted-Segment Voting Scheme
- Negative Votes Without Requirements
- Ballot Period
- Appeals
- Interpretations Policy
- Expedited Standards Development Process
- Five Year Review
- Drafting Team Formation
- Standards Committee
- Informal Feedback
- Quality Review
- Non-Binding Polls
- Errata
- Definitions
- Modifications to Standards Procedure
- Compliance Elements
- Field Tests and Collecting and Analyzing Data
- Variances
- General Comment

To facilitate the review, a spreadsheet was used to summarize the data from the ANSI review and the balloting and commenting discussions which were based on the SPIG recommendations. The spreadsheet includes a summary of the ANSI requirements, the other standard developers' process and the recommendations from the teams. There are also additional columns that include the team's discussion and notes should they need to be referred to going forward.

Throughout its review, the sub-team referred to the following five questions to guide its thinking:

1. Is there reason the NERC process is different from the ANSI requirements?
2. If we recommend using the minimum ANSI requirements, thus reducing the requirements of the current NERC process, will be the development of consensus be more difficult?
3. If we move to the minimum ANSI requirement, is there some other way to build consensus?
4. If a change to an existing NERC development step is proposed, are there examples that demonstrate the need for that change?
5. What actions (e.g., document changes or approval, software changes) are needed to make the recommended changes?

Recommendations

Currently, some elements of the NERC standards process partially exceed ANSI Essential Requirements, and others entirely exceed them. NERC meets and will continue to meet the minimum requirements for ANSI accreditation of its standards development process. Sub-team 1 suggested several changes that make the NERC standards process less stringent, while maintaining ANSI accreditation, to decrease the burden on drafting teams, stakeholders, and NERC staff without sacrificing quality.

In accordance with ANSI requirements, in the proposed process revisions, only one formal comment period is required, and drafting teams are only required to provide written responses to comments received in the formal comment period. These written responses may be given in summary form, not individually, although the drafting team may elect to respond to individual comments as deemed appropriate. The drafting team may employ informal comment periods to collect stakeholder feedback, but it will not be required to respond to comments obtained in informal forums, though it may respond if deemed appropriate.

The sub-team has also proposed that negative votes submitted without comment will be included in the determination of quorum but will *not* be included in the ballot pool approval. This change encourages stakeholders to submit constructive feedback any time they vote "no" on a standard.

In addition to these specific process requirement changes, Sub-team 1 has proposed that additional project management and facilitation support be made available to drafting teams as needed.

Sub-team 2 White Paper: Essential Elements of a Standard (Elimination of Measures, VRFs, and VSLs)

One of the SPIG's five recommendations relates to improving the NERC Standard Development Process and states:

Recommendation 4: Standards Product Issues

The NERC board is encouraged to require that the standards development process address:

- The use of results-based standards (RBS);
- 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.

One of the specific recommendations within that larger recommendation encouraged NERC's BOT to revise the Essential Elements of the Standards Template to eliminate redundancies such as Violation Severity Levels (VSLs).

In addressing Recommendation 4 and the specific recommendation just cited, the SCPS revisited the need for including certain compliance elements within a standard. In analyzing this issue, the SCPS developed a proposal whereby measures would be removed from the standard template in favor of adding more detail to RSAWs and better aligning the work of standard drafting teams (SDTs) with the content of the RSAW. The SCPS also suggests eliminating VSLs and VRFs from a standard in favor of a Sanction Table. The sections below detail the SCPS's work on these issues.

Measures

RSAWs are a valuable tool used by both Compliance Auditors and Registered Entity personnel. When carefully drafted, an RSAW can serve as a source of information on the expectations of the requirements in the standard as well as a permanent record for information of how an entity demonstrated their compliance with a requirement. RSAWs to date are not consistent in quality, nor are they equally helpful to those who use them.

In the past, RSAWs have been developed after a reliability standard was approved by the Registered Ballot Body and often after FERC approval of the subject reliability standard. RSAWs typically did not incorporate the input of the subject matter experts who developed the

reliability standard and are the best resource when it comes to the intention of the words in the standard.

Issues and Explored Alternatives

Even before the SPIG issued its recommendations, a sub-team of the SCPS developed a proposal for members of the SDT to work with NERC compliance staff in the development of the RSAW. The SCPS first considered the logistics of the SDT coordination when it comes to writing RSAWs:

- At what point in the development of the standard should this coordination start? If it's too early, requirements may change substantially, resulting in the rework of RSAW. If it's too late, then the assistance that may be gained in making sure that a requirement is clear and measurable could be lost.
- Who on the SDT would participate in the RSAW development? Or would it make more sense for compliance staff (from NERC or the regions) to participate in the SDT meetings throughout the development or at a particular point in the development? Or would it make more sense to have volunteers from NERC's Compliance & Certification Committee work with the SDT? Or should anyone who completed quality review training and had experience in a compliance department, including the compliance department of a registered entity, work as a member of the SDT in developing both the standard and the RSAW?
- Should the lawyers who help write a standard or participate on quality review teams help draft RSAWs? If they don't help with drafting, should they do a review before the RSAW is finalized to determine that the RSAW supports but does not expand on the requirements in the standard?

Next, the SCPS considered the level of detail necessary for the RSAW:

- Would it include examples of how to be compliant with a requirement along with examples of what non-compliance might look like and why?
- Would things like suggested sample size be included?
- Would it identify when attestations might be sufficient?
- Once we determine what the "ideal" RSAW looks like, should we develop a training program and require those who will develop RSAWs to participate in the training?

Next, the SCPS considered what kind of vetting the draft RSAW would need within the industry

- How much transparency do we need?
- What quantity of industry resources should it consume (being mindful of balance between opportunity for input and overwhelming industry)?
- Should there be a separate legal review, or would that be covered in the quality review of the standard?
- Should it be completed and ready for a non-binding poll at the same time the VSLs and VRFs are balloted?

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- Should it be included in the package that goes to the NERC BOT for approval along with the VSLs and VRFs?
 - Should it be included in the package that is sent to FERC?

Recommendations

Ultimately, the SCPS determined that there are many benefits to including SDT members in the development of RSAWs. An SDT could offer detail in the following categories:

- True understanding of what is intended by the words of the standard; description of the requirement and reliability intent (from the rationale, needs/goals/objectives) in the standard.
- An illustrative list of how to meet performance and for each “how,” what constitutes quality evidence that would be sufficient.
- Examples of what non-compliance might look like (e.g. “if the evidence is missing a date, it would not be considered compliant.”), if appropriate.
- Any applicable or appropriate boundaries or parameters within which there is auditor discretion (performance may be acceptable), if any.
- Identify if attestations are acceptable to “prove negative” and if there is any corroborating evidence that is “reasonable” to provide.

Including SDTs in work on RSAWs could also minimize and eventually do away with the need for CANs and formal interpretations of standards. And if RSAWs were provided to the BOT at the same time as the standard, the industry would have a “learning period” to get ready for the mandatory enforcement date. Compliance could help with performing mock audits to assist in educating the registered entities of what is expected, which would lead to a major increase in transparency.

Based on this analysis, a proposal for removing measures from the standard and adding detail to RSAWs, using input from SDTs, has been incorporated into the proposed revisions to the SPM.

VRFs and VSLs

Currently, the NERC Standards Development Process requires the development of Reliability Standards that include components that work collectively to identify what entities must do to meet their reliability-related obligations. Additionally, the Reliability Standard documents the elements necessary to demonstrate, monitor, and assess compliance with the requirements. These elements include the Violation Risk Factors (VRFs) and the Violation Severity Levels (VSLs).

VRFs and VSLs are used as factors when determining the size of a penalty or sanction associated with the violation of a requirement in an approved Reliability Standard. Each requirement in each Reliability Standard has an associated VRF and a set of VSLs. VRFs and VSLs are developed by the drafting team, working with NERC staff, at the same time as the associated standard, but they are not part of the standard. The BOT is responsible for approving VRFs and VSLs. The terms VRF and VSL are defined below:

Violation Risk Factors: identify the potential reliability significance of noncompliance with each requirement. Each requirement is assigned a VRF in accordance with the latest approved set of VRF criteria.

Violation Severity Levels: define the degree to which compliance with a requirement was not achieved. Each requirement shall have at least one VSL. While it is preferable to have four VSLs for each requirement, some requirements do not have multiple “degrees” of noncompliant performance and may have only one, two, or three VSLs. Each requirement is assigned one or more VSLs in accordance with the latest approved set of VSL criteria.

Issues

Violation Risk Factors (VRFs):

The present VRF-associated definitions were never vetted through the NERC Standards Process, primarily due to time constraints during the ERO startup. While the definitions were a useful start, this has led to a series of problems, which include:

- Lack of clear divisions between risk levels led to inconsistency in the application of VRFs
- A small number of levels (lack of granularity) led to assigning the same VRF to requirements with significantly different reliability-related risks
- Number of FERC-directed changes point to an underlying lack of clarity, consistency, and transparency in the assignment of VRFs
- The industry has confused reliability risk with importance

The factors above have led to an inconsistent approach in the assignment of VRFs in the standards development and approval process that tends to inflate assigned risk. The present VRF guidance established by the NERC Standards Committee is based on guidelines presented in Commission (FERC) Order on Violation Risk Factors, 119 FERC ¶ 61,145 at P 17 (2007) and Order on Violation Severity Levels Proposed by the Electric Reliability Organization, 123 FERC ¶ 61,284 (2008). These guidelines contribute to the difficulties associated with the assignment of VRFs and adherence to these guidelines further contributes to the SDT’s inflation of assigned risk. The VRF Guidelines are summarized below:

- **Guideline (1)** — Consistency with the Conclusions of the Final Blackout Report
- **Guideline (2)** — Consistency within a Reliability Standard
- **Guideline (3)** — Consistency among Reliability Standards
- **Guideline (4)** — Consistency with NERC’s Definition of the Violation Risk Factor Level
- **Guideline (5)** — Treatment of Requirements that Co-mingle More Than One Obligation

While the VRF is currently considered a useful tool by enforcement for assessing violations, the assignment of VRFs by SDTs is a burdensome activity that lengthens the development phase of standard projects and further extends the process and consumes resources during the balloting phase where the VRFs are presented to the industry in a non-binding poll. Additionally, the SDT

is responsible for documenting the rationale for the VRF assignments as part of the request to regulatory authorities to approve the standard.

Violation Severity Levels (VSLs):

The present VSL guidance established by the NERC Standards Committee was based initially on guidelines presented in Commission (FERC) [Order on Violation Severity Levels](#), dated June 19, 2008, and supplemented by guidance specific to CIP standards in the March 18, 2010 Order Addressing VSL Assignments in CIP Standards. The guidance directs SDTs to develop and assign a VSL (many with multiple levels of severity) to each requirement contained in a Reliability Standard. These guidelines are summarized below:

- **Guideline 1:** Violation Severity Level assignments should not have the unintended consequence of lowering the current level of compliance.
- **Guideline 2:** Violation Severity Level assignments should ensure uniformity and consistency in the determination of penalties.
- **Guideline 3:** Violation Severity Level assignment should be consistent with the corresponding requirement
- **Guideline 4:** Violation Severity Level assignment should be based on a single violation, not on a cumulative number of violations

For CIP Standards:

- Requirements where a single lapse in protection can compromise computer network security, i.e., the “weakest link” characteristic, should apply binary rather than graduated Violation Severity Levels; 11 and
- Violation Severity Levels for cyber security Requirements containing interdependent tasks of documentation and implementation should account for their interdependence.

These guidelines establish very burdensome responsibilities to the SDT which significantly lengthens the development phase of Reliability Standard projects and further extends the process and consumes resources during the balloting phase where the VSLs are presented to the industry in a non-binding poll. Additionally, the SDT is responsible for documenting the justification for the VSLs, along with how each VSL meets each of the Commission’s (FERC) guidelines, as part of the request to regulatory authorities to approve the standard. The NERC standards staff estimates that a single set of five VSLs of mixed complexity requires an investment of more than 300 hours when considering the time invested by the drafting team, stakeholders, and staff in developing, reviewing, revising, and balloting the VSLs.

Explored Alternatives

Several options have been explored by the NERC Standards Committee, the NERC Standards Committee Process Subcommittee, the NERC Compliance and Certification Committee, and various subgroups. Recent efforts were directed in the following areas:

- Violation Risk Factors (VRFs):

A subgroup comprised of industry stakeholders, as well as NERC, Regional and regulatory staff was formed to evaluate the current three-tier approach to defining the VRFs and provide recommendations for improvements to the definitions which would clarify the VRF levels and allow SDTs to accurately assign the correct VRF to each requirement. The subgroup recommended an expansion of the current 3-tier approach to a 5-tier approach to better qualify the risk the violation of a given requirement will have on reliability.

- Violation Severity Levels (VSLs):

A subgroup comprised of industry stakeholders, as well as NERC, Regional and regulatory staff was formed and directed to review a proposal from the Standards Committee Process Subcommittee to evaluate the feasibility of applying a pro forma based VSL approach to reliability standards. The subgroup concluded that while the VSL pro forma proposal approach has merit, it is not practical at this time.

The objective of the proposals was to reduce the effort standard drafting teams expend in assigning VRFs and developing VSLs for each requirement and to help improve stakeholder approval of standards hindered by perceived issues with a standard's proposed VRFs or VSLs. The conclusions for each effort were that although the final work product provides needed support to the SDTs, the efforts associated assigning VRFs and developing VSLs remain burdensome responsibilities to the SDT which significantly lengthens the development phase of Reliability Standard projects and further extends the process by consuming resources during the balloting phase where the VRFs and VSLs are presented to the industry in a non-binding poll.

Use of VRFs and VSLs in Enforcement Activities

VRFs and the VSLs are compliance elements of a Reliability Standard and utilized as such during the enforcement process. The NERC Rules of Procedure Appendix 4B *Sanction Guidelines of the North American Electric Reliability Corporation, Section 4.1 Initial Value Range of the Base Penalty Amount* states:

NERC or the regional entity will determine an initial value range for the Base Penalty Amount by considering two factors regarding the violation: the Violation Risk Factor (VRF) of the requirement violated and the Violation Severity Level (VSL) assessed for the violation. Using the Base Penalty Amount Table, NERC or the regional entity will look up the initial value range for the Base Penalty Amount by finding the intersection of the violation's VRF and VSL on the table.

The current Base Penalty Amount Table provides high and low limits for the initial monetary range associated with a violation.

Recommendations

In an effort to be responsive to the SPIG recommendations, to ease the burden on the SDTs, and to provide an opportunity to shorten the development timeframes associated with standard development projects, it is the recommendation of this sub-team to eliminate the

Violation Risk Factor (VRF) and the Violation Severity Level (VSL) from the essential elements of a Reliability Standard.

Recognizing the need to be able to determine the Base Penalty Amount associated with violations of Reliability Standards, the NERC Standards Committee Process Subcommittee has developed the ‘Sanction Table’ (Appendix A) to replace the Base Penalty Amount Table contained in Appendix 4B *Sanction Guidelines of the North American Electric Reliability Corporation* of the NERC Rules of Procedure.

The Sanction Table includes three sections, each addressing one of the three types of requirements: Operations, Cyber Security, and Planning. The base penalty range now correlates to the level of risk exposure to the BES based on the specific type of results-based requirement¹ which has been violated.

Each section identifies four levels of risk that equate to the potential degree of risk exposure to the BES and the likelihood of the violation resulting in BES instability, separation, or a cascading sequence of failures resulting from the violation of a requirement. The risk level is specific to the potential or actual risks associated with the category of Reliability Standard being evaluated.

The risk level is combined with the results-based requirement type (Performance-based, Risk-based, and Capability-based) where each type of requirement has a specific role in mitigating risk to the BES. This combination identifies a pre-defined base penalty range. The base penalty ranges identified in the Sanction Table were derived from the values that currently exist in the Base Penalty Amount Table and remain in alignment with the existing authority granted to NERC and the Regional Entities by Section 215 of the Energy Policy Act of 2005 (i.e., allows for the imposition of civil penalties of up to \$1,000,000 per day per violation). This table would be used in the same manner as the existing Base Penalty Amount Table is today.

The Sanction Table recognizes that not every violation of a Reliability Standard requirement presents the same level of risk to the BES. By establishing a reasonable penalty range which takes into account the type of results-based requirement violated combined with the level of risk exposure to the BES, the table provides a similar starting point for assessing violations and allows for further analysis of the facts and circumstances of a violation, as is done today.

To preserve the relationship between the Reliability Standard and the enforcement process, the SDT will be required to identify the type (i.e., Operations, Cyber Security, or Planning) and the category (i.e., Performance-based, Risk-based, or Capability-based) for each requirement (For example: ‘Operations – Performance-based’). If an entity is found noncompliant, then the facts and circumstances associated with the finding of noncompliance would determine which

¹ Recommendation 4: Standard Product Issues identifies the use of results-based standards (RBS) in the standard development process, per Standards Process Input Group (SPIG) report titled: Recommendations To Improve the NERC Standards Development Process, dated April 2012.

penalty range would be used as the ‘starting point’ in determining the actual penalty or sanction.

The Sanction Table does not undermine the ultimate goals established by the VRF and VSL Guidelines. By basing the severity of violations on the potential or actual risk to the BES, the application of the Sanction Table supports the reliability of the BES by establishing a level of compliance that addresses risk to the BES as opposed to how badly a requirement was violated. Additionally, the Sanction Table will maintain the current uniformity and consistency in the determination of penalties by establishing an initial penalty range, consistent with the current ranges, based on the type of results-based requirement and the level of risk exposure to the BES created by the violation. Without the need to develop VRFs and VSLs, the SDT can focus primarily on the development of the appropriate results-based (performance-based, risk-based, or capability-based) requirements.

Example

To illustrate the difficulties associated with writing comprehensive VSLs, a review of Requirement 6 of EOP 005-2 System Restoration from Blackstart Resources is provided below:

- R6.** Each Transmission Operator shall verify through analysis of actual events, steady state and dynamic simulations, or testing that its restoration plan accomplishes its intended function. This shall be completed every five years at a minimum. Such analysis, simulations or testing shall verify: *[Violation Risk Factor = Medium] [Time Horizon = Long-term Planning]*
 - 6.1.** The capability of Blackstart Resources to meet the Real and Reactive Power requirements of the Cranking Paths and the dynamic capability to supply initial Loads.
 - 6.2.** The location and magnitude of Loads required to control voltages and frequency within acceptable operating limits.
 - 6.3.** The capability of generating resources required to control voltages and frequency within acceptable operating limits.

Violation Severity Levels:

R6.	The Transmission Operator performed the verification within the required timeframe but did not comply with one of the sub-requirements.	The Transmission Operator performed the verification within the required timeframe but did not comply with two of the sub-requirements.	The Transmission Operator performed the verification but did not complete it within the five calendar year period.	The Transmission Operator did not perform the verification or it took more than six calendar years to complete the verification.
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				<p>OR</p> <p>The Transmission Operator performed the verification within the required timeframe but did not comply with any of the sub-requirements.</p>
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While the above VSLs may appear initially to cover a full range of possible violations, a closer inspection identifies several additional violations that are not clearly addressed in the VSLs, including:

- What is the VSL if the verification only covers some of the Cranking Paths?
- What is the VSL if the verification only covers some of the initial Loads?
- What is the VSL if the verification covered some but not all of the capabilities of the generation resources?
- What is the VSL if the verification covered each Blackstart resource’s Real power but not Reactive Power?
- What is the VSL if the verification missed one of several Blackstart resources?

In real life, once the Compliance Enforcement Authority determines that there has been a violation of a requirement, the VRF and VSL will identify the starting point and then the “facts and circumstances” surrounding the violation are used, in conjunction to determine a penalty or sanction. The intersection of the VRF and VSL do not, by themselves, determine the size of a penalty or sanction.

As envisioned, rather than spending hours attempting to identify the full range of possible non-compliance, under the proposed system, the SDT would write the requirement and then would simply identify the appropriate Time Horizon and the requirement type and category from the Sanction Table as shown below:

- R6.** Each Transmission Operator shall verify through analysis of actual events, steady state and dynamic simulations, or testing that its restoration plan accomplishes its intended function. This shall be completed every five years at a minimum. Such analysis, simulations or testing shall verify: *[Time Horizon = Long-term Planning] [Sanction Table: Planning - Capability-based]*

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- 6.1. The capability of Blackstart Resources to meet the Real and Reactive Power requirements of the Cranking Paths and the dynamic capability to supply initial Loads.
 - 6.2. The location and magnitude of Loads required to control voltages and frequency within acceptable operating limits.
 - 6.3. The capability of generating resources required to control voltages and frequency within acceptable operating limits.

Summary

In conclusion, the Sanction Table bridges the span between the Standard Development Process and the enforcement of mandatory Reliability Standards and allows the ERO (NERC, Regional Entities, and stakeholders) to focus on the potential risk to the reliability of the BES and how to best manage that risk by developing quality results-based Reliability Standards, managing effective Risk-based Compliance Monitoring programs and enforcing standards based on comprehensive risk assessments. The Sanction Table provides a viable alternative to the current Base Penalty Amount Table and supports the SPIG recommendations to eliminate the VSLs from the essential elements of the Reliability Standard and to promote the development of results-based standards.

Sub-team 3 White Paper: Options for Handling ‘No’ Votes

This whitepaper addresses the SPIG recommendation regarding treatment of negative ballots for the purpose of achieving quorum and calculating industry consensus. The goal of these changes is to encourage stakeholders to submit constructive and focused comments that will enable drafting teams to effectuate positive, reliability-enhancing changes to proposed Reliability Standard. Negative ballots cast without comments, or with unrelated comments, ultimately result in excessive industry resources being utilized by drafting teams and such comments frustrate the ability to build consensus on proposed projects.

One of the principal recommendations of the SPIG relates to the continued accreditation of the NERC Standard Development Process by the American National Standards Institute (ANSI) and states:

Recommendation 1: American National Standards Institute

NERC should continue to meet the minimum requirements of the American National Standards Institute (ANSI) process to preserve ANSI accreditation.

In order to meet the minimum requirements of the ANSI process, all the fundamental tenets of the process must be met. Currently, the NERC Standards Development Process exceeds the minimum ANSI requirements in a number of areas. Two of these areas involve the treatment of Negative (No) ballots (ballots “rejecting” a standards-related item, both with and without comments):

1. The NERC Standards Development Process considers negative votes with comments (regardless of the nature of the comment or if the comment is even relative to the standard being balloted) in both the determination of quorum and in calculating industry consensus.
2. The NERC Standards Development Process considers negative votes without comments in the determination of quorum and in calculating industry consensus.

Section 2.7 of the ANSI Requirements² states:

Accredited Standards Developers shall record and consider all negative votes accompanied by any comments that are related to the proposal under consideration. This includes negative votes accompanied by comments concerning potential conflict or duplication of the draft standard with an existing American National Standard and negative votes accompanied by comments of a procedural or philosophical nature. These

² ANSI Essential Requirements: Due process requirements for American National Standards, dated January 2012 (ANSI Requirements).

types of comments shall not be dismissed due to the fact that they do not necessarily provide alternative language or a specific remedy to the negative vote.

Accredited Standards Developers are not required to consider negative votes accompanied by comments not related to the proposal under consideration, or negative votes without comments. The ASD shall indicate conspicuously on the letter ballot that negative votes must be accompanied by comments related to the proposal and that votes unaccompanied by such comments will be recorded as “negative without comments” without further notice to the voter. If comments not related to the proposal are submitted with a negative vote, the comments shall be documented and considered in the same manner as submittal of a new proposal. If clear instruction is provided on the ballot, and a negative vote unaccompanied by comments related to the proposal is received notwithstanding, the vote may be counted as a “negative without comment” for the purposes of establishing a quorum and reporting to ANSI. However, such votes (i.e., negative vote without comment or negative vote accompanied by comments not related to the proposal) shall not be factored into the numerical requirements for consensus, unless the ASD’s procedures state otherwise. The ASD is not required to solicit any comments from the negative voter. The ASD is not required to conduct a recirculation ballot of the negative vote. The ASD is required to report the “no” vote as a “negative without comment” when making their final submittal to the ANSI Board of Standards Review unless the ASD has been granted the authority to designate its standards as American National Standards without approval by the BSR.

As indicated above, ANSI requirements consider negative votes with comments related to the proposal under consideration in determining quorum and the calculation of industry consensus. However, ANSI requirements do not require the consideration of negative votes accompanied by comments that are not related to the proposal under consideration, or negative votes without comments in determining industry consensus. ANSI requirements allow for negative votes to be considered only in the calculation to determine quorum.

Issues

1. Should the NERC Standards Development Process only consider negative votes with related comments in the calculation to determine industry consensus?
2. Should the NERC Standards Development Process consider negative votes without any comments in the calculation to determine industry consensus?

Proposed Comment Criteria and Proposal

There are two proposed revisions to the Standards Process Manual related to the consideration of negative ballots.

First, it is proposed that negative votes must be submitted with comments that are *related* to the proposal under consideration. This includes clarifying comments or stated objections, comments of a procedural nature and comments concerning potential conflict or duplication of the draft Reliability Standard, Interpretation, Variance or definition with an existing Reliability Standard, Interpretation, Variance or definition. Comments should include guidance/input to

the drafting team that would assist efforts that would make revisions to the Reliability Standard acceptable and enable an affirmative vote in a subsequent ballot.

Second, negative ballots that contain no comments whatsoever, will not be counted for purposes of determining consensus. Such comments are inconsistent with NERC's consensus building process and provide no input to drafting teams and therefore add no value to the standards development process.

Both negative ballots with unrelated comments and negative ballots with no comments would be used in the calculation of quorum but would not be used in the calculation to determine consensus.

If a drafting team determines that a negative ballot has been submitted without a comment or with a comment that is unrelated to the proposal under consideration, the drafting team must submit its finding in writing to the Standards Process Manager within 30 calendar days of the closing of the comment period. The report will include the drafting team's rationale for each comment deemed to be invalid. If this finding is affirmed by the NERC Legal department, the Standards Process Manager will then provide the balloter an opportunity to provide additional comments. If the balloter does not provide related comments within 10 business days, the ballot results will be recalculated without the negative ballot. Each such balloter shall be informed of the appeals process contained within this manual. Where the outcome of the ballot result is affected by a negative ballot that is the subject of an appeal, the ballot results will not be considered final until the appeal is resolved pursuant to this manual.

This process provides a number of checks and balances to ensure that the determination of whether a comment is "related" to a proposal is carefully considered.

NERC's website is scheduled to be rebuilt and the page where ballots are cast will need to be revised. The above comment guidance and associated proposal should be clearly articulated so the entity casting the vote is fully aware that submission of helpful comments to the drafting team is critical to a successful stakeholder process for standards development. The NERC website should clearly indicate how votes are considered and counted towards consensus. In conclusion, this proposed revision to the Standards Process Manual will conform to the minimum ANSI requirements in regards to the balloting criteria employed in the development of Reliability Standards. Further, recent revisions to the SPM have indicated that the early engagement of stakeholders in the development process produces higher quality Reliability Standards, and these revisions support this concept. The goal is to ensure that the drafting teams have the best opportunity to build consensus while still remaining responsive to the concerns raised by stakeholders.

Sub-team 4 White Paper: Cost Effective Analysis Process

Work on a Cost Effective Analysis Process (CEAP) was initiated before the SPIG recommendations were issued in response to concerns expressed by stakeholders and regulators in both the U.S. and Canada. The CEAP introduces the concept of cost consideration and effectiveness into the development of new and revised standards and affords the industry with opportunities to offer alternative methods to achieve the reliability objective of draft standards which may result in fewer implementation costs and resource expenditures. The draft CEAP was developed from the Northeast Power Coordinating Council (NPCC) regional CEAP, which was originally developed by NPCC in response to concerns raised by its regional Board of Directors regarding the need for standards development to consider potential cost impacts.

At the direction of the SC, the draft CEAP document was posted for a 60-day comment period, which will run through July 6, 2012. The SCPS will review comments received, incorporate pertinent comments into the CEAP, and align the document with the SPM revisions as necessary. Because this concept was developed before the SPM revisions, rather than developing a separate white paper on the topic, the sub-team has included the executive summary from the draft CEAP below. The full explanation of the CEAP process is available on the project page on NERC's website³.

Executive Summary

The Federal Energy Regulatory Commission, NERC, and stakeholders have expressed keen interest in a process to determine effectiveness and implementation costs of proposed standards. During a 2010 FERC technical conference, the Commission recognized that "reliability does not come without cost," and significant interest was expressed in development of a process to identify costs for draft reliability standards and the ability of the proposed standards to achieve their reliability objective(s) in a cost effective manner. In addition, the NERC Board of Trustees (BOT), in its consideration of standards, has expressed concern regarding what a standard's implementation may cost the industry and the relevant incremental reliability improvement (benefits) that implementation of that standard may yield. This NERC Cost Effective Analysis Process (CEAP) represents an initial step towards addressing concerns regarding cost impacts (implementation, maintenance, and ongoing compliance resource requirements) associated with achieving reliability objectives identified in standards. The CEAP allows the industry the opportunity to identify alternative requirements for meeting a standard's reliability objective that may be less costly and equally as effective and efficient during the drafting process to help all in making informed choices. The approach described

³ http://www.nerc.com/filez/standards/Cost_Effective_Analysis_Process.html

poses questions and provides aggregated results in the form of a report to the industry for informational purposes during balloting.

The CEAP introduces two assessments: one for feasibility, and another to determine the estimated industry wide cost impacts (implementation, maintenance, and ongoing compliance resource requirements) and potential reliability benefit of requirements in a proposed draft standard. “Cost impact,” as used throughout the remainder of the document, is meant to include “implementation, maintenance, and ongoing compliance resource requirements, and reliability benefit.” This will provide invaluable input into that standard’s development process. The procedure, conducted in parallel with the drafting process, is crafted so it does not delay the development of the standard, but adds supporting information and background for the NERC stakeholders, ballot body, and the NERC Board of Trustees, to be utilized for decision making. In addition to providing a “snapshot” looking at an estimate of the cost impacts of the proposal, the CEAP will also solicit input from an independent and wider range of technical perspectives of the industry as well as NERC’s technical groups to determine if any unintended adverse impacts may be created with respect to other Regional or Continent wide standards, should the draft standard be approved.

The CEAP will be utilized to perform an analysis of the cost impacts of the proposed requirements in NERC Reliability Standards as they are developed, and prior to their approval by the NERC Board of Trustees. Implementation of the CEAP will be coordinated with the steps outlined in the NERC SPM for developing a Reliability Standard.

The CEAP incorporates two separate phases of reviews. The first phase to be conducted is an estimated high level Cost Impact Analysis (CIA) that will be based on the responses to an initial set of questions posed to the industry during the Standard Authorization Request (SAR) stage, as part of the SAR posting, to determine if the standard project should be pursued. This Cost Impact Analysis is intended to be an assessment to determine the relative cost impacts (in orders of magnitude) of a particular proposed course of action. A comprehensive cost impact or benefit analysis is not being sought at this time. The focus of this effort is to obtain the information required to quantize the cost portion of the cost benefit equation. The “benefits” will be listed separately and may consist of either quantitative or qualitative information. Questions posed during the SAR stage to the industry will focus on probability and potential cost impacts. Questions posed during the SAR phase will also determine if the standard, in the view of stakeholders, would achieve an Adequate Level of Reliability (ALR), or go “beyond” what is considered adequate, to achieve some additional optimum or premium level of reliability as well as what “reliability risk” may be mitigated. Cost information collected in this phase will strictly be “order of magnitude costs” to determine if a proposed standard will have egregious costs associated with it.

Once this information is gathered and compiled by NERC staff, NERC staff will present it to the NERC Standards Committee (SC) for review, and the SC will make a determination whether or not to pursue the development of the standard. The CIA might lead to the conclusion that a technical guideline or white paper might be a preferred undertaking as opposed to a mandatory standard in a given area.

The second phase of the CEAP will be the Cost Effectiveness Assessment (CEA). The CEA may be considered a more detailed assessment whose purpose is to provide information about the relative effectiveness and cost impacts of different approaches to eliminating disparities, increasing life expectancy, or of any program or initiative. This will involve two sets of questions which will be asked concurrently. The first set is to solicit industry opinion on the technical feasibility and effectiveness to achieve the reliability objective of the standard with its requirements as well as possible alternatives. The second set of questions will be used to solicit cost impact, cost recovery, resource, and estimated time required with actions and facilities associated with the implementation of compliance with the draft standard. These ultimately should be done on a requirement by requirement basis, and questions will ideally be posted once the draft standard's requirements have been sufficiently solidified later in the standard development process.

The NERC Standards Staff will evaluate all information provided and produce a CEAP report that will be provided to the NERC SC for their endorsement, and to the standard drafting team for information. All of the cost impact information submitted by entities will be reviewed and compiled by NERC staff prior to being made public, or presented to the SC. Market sensitive issues of individual stakeholders may exist or be provided through the responses to the CEAP questions. Necessary confidentiality will be maintained, and no market sensitive information will be revealed. In addition, information in the final posted report will be based on the total number of respondents with due regard to regional reliability impacts. Upon approval, the report will be posted along with the NERC standard during balloting, or result in a remanded standard to be sent back to the standard drafting team with recommendations requiring further consideration along with potential issues for stakeholder consideration.

In the production of a final CEAP report, all available NERC resources will be utilized effectively and efficiently. If the industry responses were insufficient in the view of NERC staff when compiling the responses, efforts will be made to extrapolate without drawing conclusions, clearly identifying where this extrapolation may have been done in the final report. It must be emphasized that the purpose of the CEAP is not to provide additional obstacles to the NERC standard development process, but rather to inform stakeholders of proposed industry cost impact and provide an opportunity for suggestions of alternate methods to achieve equally effective reliability goals and objectives that may result in less cost. The final report is intended to be less analytical in nature and rather to promote better judgment and decision making.

Conclusion

Collectively, these changes to the SPM address the recommendations of the SPIG and identify ways to make best use of industry resources as the ERO develops technically sound standards in an efficient way. When it approved the draft SPIG recommendations in May, the BOT set December 31, 2012, as the deadline for filing the proposed SPM and ROP changes with FERC, and directed the SC to bring a proposed package of revisions to the standards process for its adoption in November. These revisions will require hard work from the industry over the next six months, but the result should be a process that stakeholders can agree is an improvement. If we can solicit good feedback now, we can ensure that we develop an excellent product as efficiently as possible, with wide industry support.

'Operations' Sanction Table

Type of Operations Requirement	Level 1 – a violation is not expected to adversely impact electrical state/capability of BES or ability to monitor/control BES.	Level 2 - a violation could directly and adversely impact electrical state/capability of BES or ability to monitor/control BES – unlikely to contribute to BES instability, separation, or a cascading sequence of failures.	Level 3 - a violation could contribute to impeding restoration, damaging equipment or non-consequential load loss or could contribute to BES instability, separation, or a cascading sequence of failures.	Level 4 – a violation could directly cause BES instability, separation, or a cascading sequence of failures.
Performance-based				
Such as but not limited to: <ul style="list-style-type: none"> • Perform action involving Elements and Facilities • Perform communications about Elements and Facilities • Set relays/coordinate relay settings • Perform maintenance • Implement a process, procedure, or plan • Develop ratings and 	\$3000 - \$125000	\$75000 - \$300000	\$15000 - \$625000	\$25000 - \$1000000

limits				
Risk-based				
Such as but not limited to: <ul style="list-style-type: none"> • Develop an action plan • Conduct a study to support development of a process, procedure, or plan • Provide/distribute data, information, process, procedure, or plan • Verify/maintain/test a process, procedure, or plan 	\$2000 - \$75000	\$4000 - \$200000	\$6000 - \$410000	\$10000 - \$675000
Capability-based				
Such as but not limited to: <ul style="list-style-type: none"> • Have a process, procedure, or plan • Verify that personnel authority exists • Verify that agreement exists • Verify personnel qualifications 	\$1000 - \$30000	\$2000 - \$100000	\$3000 - \$200000	\$5000 - \$335000

<ul style="list-style-type: none"> • Verify Facility meets criteria • Verify accuracy of data 				
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'Cyber Security' Sanction Table

Type of Cyber Security Requirement	Level 1 – a violation could adversely affect Low Impact BES Cyber Systems; but would not be expected to expose the electrical state or the capability of the BES; or the ability to effectively monitor and control the BES.	Level 2 - a violation could adversely impact Medium Impact BES Cyber Systems; a violation could adversely expose the electrical state or the capability of the BES; or the ability to effectively monitor and control the BES - A violation of the requirement is unlikely to lead to BES instability, separation, or cascading failures.	Level 3 - a violation could adversely impact High Impact BES Cyber Systems; a violation could contribute to impeding restoration, damaging equipment or non-consequential load loss or could contribute to BES to instability, separation, or a cascading sequence of failures.	Level 4 – a violation could directly expose the BES to instability, separation, or a cascading sequence of failures.
Performance-based				
Such as but not limited to: <ul style="list-style-type: none"> • Act to protect cyber assets 	\$3000 - \$125000	\$75000 - \$300000	\$15000 - \$625000	\$25000 - \$1000000

<ul style="list-style-type: none"> • Other 				
Risk-based				
<p>Such as but not limited to:</p> <ul style="list-style-type: none"> • Implement a cyber security process, procedure, plan • Implement a cyber security program • Distribute a cyber security plan • Verify/maintain/test a cyber security process, procedure, plan 	\$2000 - \$75000	\$4000 - \$200000	\$6000 - \$410000	\$10000 - \$675000
Capability-based				
<p>Such as but not limited to:</p> <ul style="list-style-type: none"> • Have a cyber security process, procedure, policy, or plan • Have a cyber security program • Provide education on cyber security • Verify qualifications of personnel • Categorize BES Cyber Systems and Assets 	\$1000 - \$30000	\$2000 - \$100000	\$3000 - \$200000	\$5000 - \$335000

<ul style="list-style-type: none">• Verify existence of authority• Verify that an agreement exists				
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'Planning' Sanction Table

Type of Planning Requirement	Level 1 - a violation would not be expected to adversely affect the ability to assess the long-range reliability of the BES.	Level 2 - a violation could directly and adversely affect the ability to assess the long-range reliability of the BES .	Level 3 - a violation could contribute to development of a long-range plan that, if followed, could adversely affect the BES' ability to respond to contingencies.	Level 4 - a violation could directly cause development of a long-range plan that, if followed, could adversely affect the BES' ability to respond to contingencies.
Performance-based				
Such as but not limited to: <ul style="list-style-type: none"> • Conduct an analysis/assessments • Verify/maintain a model • Implement a methodology, process, procedure, or plan • Develop ratings or limits 	\$3000 - \$125000	\$75000 - \$300000	\$15000 - \$625000	\$25000 - \$1000000
Risk-based				
Such as but not limited to:	\$2000 - \$75000	\$4000 - \$200000	\$6000 - \$410000	\$10000 - \$675000

<ul style="list-style-type: none"> • Have a model • Conduct a study to support development of a methodology, process, procedure, or plan • Provide/distribute data or information 				
Capability-based				
<p>Such as but not limited to:</p> <ul style="list-style-type: none"> • Have a methodology, process, procedure, plan • Verify accuracy of data 	\$1000 - \$30000	\$2000 - \$100000	\$3000 - \$200000	\$5000 - \$335000