

Exhibit A — Reliability Standards Work Plan 2007 — 2009



**NORTH AMERICAN
ELECTRIC
RELIABILITY
COUNCIL**

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Reliability Standards Development Plan: 2007–2009

Volume I Work Plan and Schedule

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Volume I: Work Plan and Schedule

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Volume II: Project Descriptions (provided separately)

Volume III: Work Plan for Regional “Fill-in-the-Blank” Standards (provided separately)

Introduction

Purpose

This work plan is a management tool to guide and coordinate the development of reliability standards and provide benchmarks for assessing progress. The work plan serves as a communications tool for coordinating standards development work with applicable governmental agencies in the United States and Canada, and for engaging stakeholders in standards development. The plan provides a basis for developing annual work plans and budgets for the standards program.

The initial stage in the establishment of mandatory reliability standards began with the translation of the historical operating policies, planning standards, and compliance templates into a baseline set of working standards. That work is now drawing to a close as missing compliance elements are completed, violation risk factors are added, and plans are being finalized to address regional “fill-in-the-blank” standards.

Attention in this three-year work plan shifts the focus from establishing a baseline set of standards to improving the starting point established by the Version 0 reliability standards. The improvements address issues exemplified in the May 11, 2006 *Federal Energy Regulatory Commission Staff Preliminary Assessment of Proposed Reliability Standards*. In that report, the FERC Staff stated that certain proposed standards are (1) ambiguous; (2) insufficient to ensure an adequate level of reliability; (3) fail to contain adequate “measures and compliance;” (4) may have an undue impact on competition; and (5) are “fill-in-the-blank” standards. The Staff report also pointed out that NERC has not completed standards addressing all recommendations made following the August 2003 Northeast blackout. The work plan enclosed here is intended to address these issues, as well as previous comments and issues noted by industry in the initial development of the standards.

In all, the work plan defines 31 standards development projects. The work plan also allocates resources to begin four new, as yet unidentified, high-priority projects. Experience over the past few years demonstrates that important new projects will emerge each year because of industry need or unforeseen circumstances.

The goal of the work plan is to ensure that the entire set of standards provides an adequate level of reliability to the North American bulk power system, and is enforceable upon all bulk power system owners, operators, and users in accordance with applicable statutes and regulations in the United States and Canada.

Work plan objectives that support this goal include:

- Addressing remaining blackout recommendations requiring new or revised standards.
- Addressing prior comments from industry, FERC, and others suggesting improvements to each standard.
- Addressing quality issues to ensure each standard has a clear statement of purpose, and has outcome-focused requirements that are clear and measurable.

- Ensuring measures and compliance elements are aligned to support the requirements within the standard and follow definitions outlined in the standards template.
- Reorganizing the standards more logically based on topic and remove redundancies.
- Addressing other pending proposals for new standards.
- Satisfying the requirement for a five-year review of all standards.

Developing excellent reliability standards is a long-term effort that needs the flexibility to continuously adapt to events and changing priorities. Therefore, the plan will remain dynamic as new standards are proposed and priorities evolve. The work plan will be maintained by the NERC Standards Committee and program staff, and will be updated on an annual basis, more frequently if needed.

To be adopted as mandatory, all standards must be filed and approved by the applicable regulatory authorities. NERC intends to annually review its standards work plan with applicable governmental authorities in the United States and Canada so as to coordinate work priorities and expectations with them. In addition to approving the standards, the regulatory authorities will be able to direct the development of standards and to remand standards to the ERO for additional work if needed.

Background

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

On July 20, 2006 the Commission issued its *Order Certifying NERC as the Electric Reliability Organization (ERO) and Ordering Compliance Filing*, finding that NERC met the requirements of Order No. 672. In issuing the Order, the Commission directed NERC to provide additional information and file specific revisions to its rules within 90 days, which NERC has done. On September 15, 2006 the National Energy Board of Canada announced a memorandum of understanding recognizing NERC as the ERO in Canada. NERC continues to work toward establishing a framework for the ERO in each province.

On a parallel track, in April 2006 NERC filed a petition for approval of 102 reliability standards. After that, NERC continued to develop and improve its reliability standards, and in August 2006 filed 16 new and 11 revised standards (one standard was retired, bringing the total to 117 pending approval). The Commission issued a Notice of Proposed Rulemaking (NOPR) in October 2006, proposing to make 83 of the standards mandatory before the summer of 2007. The Commission proposes to direct improvements to 62 of these standards and that work is contained in this work plan. The work plan also addresses the 24 standards that the Commission

neither approved nor remanded, which are referred to as the “fill-in-the-blank” regional standards. The Commission will address the cyber security standards in a separate rulemaking.

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

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

A key element of the work plan is to review and upgrade all the existing standards based on the directives in the Commission’s proposed rulemaking; previous industry comments and actual experience gathered from using the standards; and, information provided in the Staff assessment. NERC’s rules, and a condition of accreditation by the American National Standards Institute, require that each standard be reviewed at least every five years. NERC received ANSI accreditation on March 24, 2003. NERC anticipates completing its review and upgrade of standards identified in this work plan over several years, beginning with the highest-priority standards in 2007 (some projects are continuing from 2006).

NERC’s *Reliability Standards Development Procedure* provides a systematic approach to improve the standards and to document the basis for those improvements, and it also will serve as the mechanism for achieving those improvements. Active involvement of industry experts and stakeholders ensures the best possible opportunity for developing excellent standards.

NERC coordinates its reliability standards development activities with the business practices developed by the North American Energy Standards Board (NAESB) and with the ISO/RTO Council. The three organizations coordinate their activities through a Joint Interface Committee.

Plan Organization

The Reliability Standards Development Plan: 2007–2009 is organized as follows:

Volume I

- Work plan overview:

Reliability Standards Development Plan: 2007–2009

- Introduction explaining the purpose of the work plan and background.
- Work plan description.
- Issues to be addressed in improving standards.
- Appendix A — Schedule and milestones (separate detailed project schedules are available for distribution to the drafting teams).

Volume II

- Appendix B — Project descriptions and preliminary standards requests:
 - Preliminary outline of a request for each project, describing purpose and scope of project.
 - Work sheets identifying specific issues to be addressed for each standard.

Volume III

- Plan to address regional “fill-in-the-blank” standards:
 - Work plan overview.
 - Schedule.
 - Preliminary Standard Authorization Requests and work scopes.

Resource Documents

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

- [FERC NOPR on Reliability Standards](#), October 20, 2006.
- [FERC Staff Preliminary Assessment of Proposed Reliability Standards](#), May 11, 2006.
- [Comments of the North American Electric Reliability Council and North American Electric Reliability Corporation on Staff Preliminary Assessment of Reliability Standards](#), June 26, 2006.
- [Comments received during the development of Version 0 reliability standards.](#)
- [Consideration of comments of the Missing Compliance Elements drafting team.](#)
- [Consideration of comments of the Violation Risk Factors drafting team.](#)
- [Consideration of comments in the Phase III–IV standards.](#)

A summary of comments received on each standard has been provided in the individual work sheets provided in Appendix B (Volume II) for use by the drafting teams.

Work Plan Description

Overview

A large portion of the work plan is dedicated to reopening the existing reliability standards to incorporate improvements. The plan groups the existing standards into projects based on content. Standards with related content are grouped together into a single project to allow a team of experts to consolidate the requirements, eliminate redundancies, and to ensure consistency of all the requirements in all the standards. This approach makes the most efficient use of industry experts.

A total of 31 different projects are defined in Appendix B (Volume II). Some of the projects address revising a single standard, such as FAC-003. The largest project includes revising 19 standards focusing on related topics: reliability coordinator performance standards IRO-001 to IRO-005 and IRO-014 to IRO-016; reliability coordinator certification standards ORG-020 to ORG-27; reliability coordinator staffing and training standard PER-004; and, communications standards COM-001 and COM-002. Managing the projects in this manner will provide an opportunity to clearly separate certification requirements (the capability to be a competent reliability coordinator) from the requirements measuring ongoing reliability performance. Those requirements are co-mingled in the existing standards today.

The size and makeup of the drafting teams will be determined according to the project scope. Some drafting teams may choose to subdivide the work. The teams will focus on effectively integrating the scope of the work within the project to ensure that the standards are consistent and comprehensive across the subject area.

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

Several important standards projects are already under way. Those existing projects are expected to conclude with the standards being approved at the February 2007 NERC Board of Trustees meetings, and are thus not addressed in the work plan. These include the balancing resources and demand standards (BAL-007 to BAL-011), relay loadability standard, and the nuclear off-site power supply coordination standard.

The plan does include all other projects to be completed after February 2007. Note that the project number indicates the year the project was initiated and the sequence within the year.

Reliability Standards Development Plan: 2007–2009

Projects initiated in 2006:

- 2006-01 System Personnel Training (PER-002 and PER-004)
- 2006-02 Transmission Assessments and Plans (TPL-001 to TPL-006)
- 2006-03 System Restoration and Blackstart (EOP-005 to EOP-007, and EOP-009)
- 2006-04 Backup Facilities (COM-001 and EOP-008)
- 2006-05 Phase III & IV Field Tests (PRC-019, PRC-024, MOD-026, and MOD-027)
- 2006-06 Reliability Coordination (COM-001, COM-002, IRO-001 to IRO-005, IRO-007 to IRO-016, ORG-020 to ORG-027, PER-004, and PRC-001)
- 2006-07 Transfer Capabilities: ATC, TTC, CBM, and TRM (FAC-012, FAC-013, and MOD-001 to MOD-009)
- 2006-08 Transmission Loading Relief (IRO-006)
- 2006-09 Facility Ratings (FAC-008 and FAC-009)

Projects starting in 2007

- 2007-01 Underfrequency Load Shedding (PRC-006 to PRC-009)
- 2007-02 Operating Personnel Communications Protocols (COM-002)
- 2007-03 Real-time Transmission Operations and Balancing of Load and Generation (COM-001, COM-002, TOP-001 to TOP-008, ORG-001 to ORG-018, and PER-001)
- 2007-04 Certifying System Operators (PER-003)
- 2007-05 Balancing Authority Controls (BAL-002, and BAL-004 to BAL-006)
- 2007-06 System Protection (PRC-001)
- 2007-07 Vegetation Management (FAC-003)
- 2007-08 Emergency Operations (EOP-001 to EOP-003, and IRO-001)
- 2007-09 Generator Verification (MOD-024 and MOD-025)
- 2007-10 Modeling Data (MOD-010 to MOD-015, PRC-013, PRC-015, PRC-020, and PRC-021)
- 2007-11 Disturbance Monitoring (PRC-002 and PRC-018)

Projects starting in 2008

- 2008-01 Voltage and Reactive Control (VAR-001 and VAR-002)
- 2008-02 Undervoltage Load Shedding (PRC-010, PRC-011 011, and PRC-022)
- 2008-03 Demand Data (MOD-016 to MOD-021)
- 2008-04 Protection Systems (PRC-003 to PRC-005, PRC-012, PRC-014, PRC-016, and PRC-017)
- 2008-05 Cyber Security (CIP-002 to CIP-009)
- 2008-06 Phasor Measurement Units (new)
- 2008-07 Resource Adequacy Assessments (new)

Projects starting in 2009 and beyond

- 2009-01 Disturbance and Sabotage Reporting (CIP-001, EOP-004)
- 2009-02 Connecting New Facilities to the Grid (FAC-001 and FAC-002)
- 2009-03 Interchange Information (INT-001, and INT-003 to INT-010)
- 2010-01 Support Personnel Training (new)

Some current standards are not included in the work plan due to retirement or replacement:

- BAL-001 and BAL-003

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- FAC-004 and FAC-005
- INT-002
- PER-002

Work on the regional standards will be coordinated with the NERC projects. The work plan to address regional “fill-in-the-blank” standards, with an evaluation provided in Volume III of this plan, has been integrated into the project list above to facilitate consistency between the North American standards and regional standards.

Several of the identified projects require studies to develop the technology or methods that need to be used in the standards. The studies are identified within the project descriptions and the schedules of the projects allow time to complete the studies. The studies will be requested of the NERC Operating and Planning Committees, as well as other groups with the appropriate expertise to complete the study.

The work plan includes placeholders for two high-priority projects per year that are unknown at this time. Experience demonstrates that requests will come in for high-priority work on a continual basis and the resources must be available to handle such requests.

The project timelines have been developed with a certain set of base assumptions regarding the number of postings of each Standard Authorization Request and draft standard and the time needed to complete underlying studies. The project schedule is intended to estimate milestones and provide feedback regarding progress on the projects. However, in most instances NERC believes it will be more important to focus on ensuring that the standards are correct, rather than to rush them through a process. Therefore, NERC anticipates that schedules could change over time. The Standards Committee and NERC staff will oversee the work of the drafting teams to ensure that any delays maintain a productive and necessary pace, and avoid inefficiency.

The overall schedule for the work plan is shown in Appendix A. Detailed project descriptions are shown in Appendix B (Volume II).

Strategy for Project Resources

The work plan has been designed to recognize there are limited staff and industry resources to complete the projects immediately and completely. While the volume of work and the schedule are aggressive, they are manageable with the work being extended over several years, and because much of the work is revising and improving existing standards for which the issues are already well-defined.

The sequence of projects has been adjusted to spread the use of industry expertise over several years in the project. For example, system protection experts are a limited resource and each project requiring that expertise was spread out from the other for that reason. This same approach was used in sequencing most of the projects. NERC staff resources can effectively facilitate up to four average-sized projects, another limitation also accounted for in the development of the work plan.

NERC staff will assign project facilitators. The drafting teams will be formed through the regular nominations process and appointed by the Standards Committee. Smaller projects may be staffed with only a few experts to preserve resources for larger projects. Even the larger projects will be scaled down in size compared to past projects such as the Version 0 effort or the Phase III-IV standards. Larger projects are expected to be staffed with up to 15 industry representatives. The smaller teams will allow efficient coverage of the numerous projects without over-committing industry resources. Stakeholder input is preserved through the public commenting and voting on standards.

NERC has also established an aggressive program to make more extensive use of conference calls and WebEx meetings to cut down on travel time associated with meetings.

Global Improvements

Statutory Criteria

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

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

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

The standards must collectively provide a comprehensive and complete set of technically sound requirements that establish an acceptable threshold of performance necessary to ensure the reliability of the bulk power system. “An adequate level of reliability” would argue for both a complete set of standards addressing all aspects of bulk power system design, planning, and operation that materially affect reliability, and for the technical efficacy of each standard.

Quality Objectives

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

1. **Applicability** — Each reliability standard shall clearly identify the functional classes of entities responsible for complying with the reliability standard, with any specific additions or exceptions noted. Such functional classes¹ include: reliability coordinators, balancing authorities, transmission operators, transmission owners, generator operators, generator owners, interchange authorities, transmission service providers, market operators, planning coordinators, transmission planners, resource planners, load-serving entities, purchasing-selling entities, and distribution providers. Each reliability standard

¹ These functional classes of entities are derived from NERC’s Reliability Functional Model. When a standard identifies a class of entities to which it applies, that class must be defined in the Glossary of Terms Used in Reliability Standards.

shall also identify the geographic applicability of the standard, such as the entire North American bulk power system, an interconnection, or within a regional entity area. A standard should also identify any limitations on the applicability of the standard based on electric facility characteristics, such as generators with a nameplate rating of 20 MW or greater, or transmission facilities energized at 200 kV or greater.

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

Issues Related to the Applicability of a Standard

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

The term “owner, operator and users of the bulk power system” defines the statutory applicability of the reliability standards. NERC’s Reliability Functional Model further refines the set of owners, operators, and users by identifying categories of functions that entities perform so the applicability of each standard can be more clearly defined. Applicability is clear if a standard precisely states the applicability using the functions an entity performs. For example, “a generator operator shall verify the reactive power output capability of each generating unit” states clear applicability compared with a standard that states “a bulk power system user shall verify the reactive power output capability of each generating unit.” The use of the Reliability Functional Model in the standards narrows the applicability of the standard to a particular class or classes of bulk power system owners, operators, and users. A standard is more clearly enforceable when it narrows the applicability to a specific class of entities than if the standard simply references a wide range of entities, e.g., all bulk power system owners, operators, and users.

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

In addition to applying definitions from the Reliability Functional Model, the revised standards must address more specific applicability criteria that identify only those entities and facilities that are material to bulk power system reliability with regard to the particular standard. For example, the drafting team may determine that only generators above 20 MW may be material with regard to a particular standard. The drafting team may choose to indicate a nominal voltage level or other criteria to indicate transmission facilities that are relevant to the reliability of the bulk power system in the context of a particular standard. The drafting team should consider other clarifications to applicability, such as transmission operators that perform bulk power system switching or transmission owners with special protection systems. The drafting team should consider guidance in the Reliability Functional Model regarding which entities are responsible for a wide-area perspective, such as the reliability coordinator and planning coordinator, compared to entities that are responsible for a more local perspective.

The drafting team should strive to clearly define the entities and facilities that are addressed by the standard, and which are considered not relevant to the reliability of the bulk power system. Given the diversity of electric systems in North America, this is a difficult task and exceptions can always be expected to exist. The goal is to place obligations on the entities whose performance will impact the reliability of the bulk power system, but to avoid painting the applicability with such a broad brush that entities become obligated even when meeting a requirement will make no material contribution to bulk power system reliability.

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

A similar line of thinking can apply to every other entity in the Reliability Functional Model, including load-serving entities and purchasing-selling entities, which are users of the bulk power system to the extent they transact business for the use of transmission service or to transfer power across the bulk power system. NERC has specific requirements for these entities based on how these uses may impact the reliability of the bulk power systems. Other functional entities are more obviously bulk power system owners and operators, such as reliability coordinators, transmission owners and operators, generator owners and operators, planning coordinators, transmission planners and resource planners. It is the extent to which these entities provide for a reliable bulk power system or perform functions that materially affect the reliability of the bulk power system that these entities fall under the jurisdiction of Section 215 of the FPA and the proposed reliability standards. The use of the Reliability Functional Model simply groups these entities into logical functional areas to enable the standards to more clearly define the applicability.

Issues Related to Regional Entities and Reliability Organizations

Because of the transition to mandatory reliability standards, confusion has arisen with regard to the distinction between regional entities and regional reliability organizations. The regional councils that have until now been the owners and members of NERC have historically been referred to as regional reliability organizations in the Reliability Functional Model and in the standards. In an era of voluntary standards and guides, it was acceptable that a number of the standards placed requirements on regional reliability organizations to develop regional criteria, procedures, and plans, and that entities within the region would be expected to follow those requirements. Section 215 of the FPA introduces a new term, called regional entities. Regional entities have delegated authorities, under agreement with NERC, to propose and enforce reliability standards within the region, and to perform other functions in support of the electric reliability organization. The existing regional reliability organizations are expected to apply to become regional entities.

With the regions having responsibility for enforcement, it is no longer appropriate for the regions to be named as responsible entities within the standards. The work plan calls for removing requirements from the standards that refer to regional reliability organizations, either by deleting

the requirements or redirecting the responsibilities to the most applicable functions in the Reliability Functional Model, such as planning coordinators, reliability coordinators, or resource planners. In instances where a regional standard or criteria are needed, the ERO may direct the regional entities to propose a regional standard in accordance with ERO Rule 312.2, which states NERC may “direct regional entities to develop regional reliability standards.” There is no need to have a NERC standard that directs the regions to develop a regional standard. NERC standards should only include regional entities or RROs in the rare instance the region has a specific operational, planning, or security responsibility.

Many of the so-called regional “fill-in-the-blank” standards can be rewritten as North American standards, without diluting the requirements to a least-common-denominator solution. The regional standards work plan in Volume III addresses specific examples of standards that will become North American standards as a result of the projects in this work plan. In the cases that the regional entities are required to develop regional standards, such as in underfrequency load shedding, NERC can direct the regions to propose such standards and may, if necessary develop a uniform North American standard to serve as a default.

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

Issues Related to Ambiguity

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

There are many areas in which the reliability standards can be further improved beyond the changes incorporated in the Version 0 translation and other post-blackout clarifications to the operating policies. Each performance requirement must be written to include four elements:

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

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

Issues Related to Technical Adequacy

The Staff Report notes that requirements specified in some standards may not be sufficient to ensure an adequate level of reliability. While Order No. 672 notes that “best practice” may be an inappropriately high standard, it also warns that a “lowest common denominator” approach will not be acceptable if it is not sufficient to ensure system reliability.

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

Issues Related to Measures and Compliance Elements

Although an effort has been made to provide measures and compliance information for all existing standards, some standards provide only a partial set of measures or compliance information. The drafting teams should ensure that each performance requirement is covered by one or more measures and the information necessary to guide compliance monitoring.

Each requirement must be addressed by one or more measures. A measure states what a responsible entity must do to demonstrate compliance to a third party, i.e., the compliance monitor. Measures are proxies, or “yardsticks” used to evaluate whether required performance or outcomes have been achieved. Measures do not add new requirements or expand the details of the requirements. Each measure shall be tangible, practical, and objective. A measure should be written so that achieving full compliance with the measure provides the compliance monitor with the necessary and sufficient information to demonstrate that the associated requirement was met by the responsible entity. Each measure should clearly refer to the requirement(s) to which it applies and each requirement should clearly indicate which measure(s) apply to that requirement.

The violation severity levels (formerly known as levels of non-compliance) are meant to indicate how severely an entity violated a requirement. For example, in the recently approved standard on vegetation management, there are three levels of non-compliance ranging from whether the vegetation management program has all necessary documentation to meet the requirements to the number of transmission outages due to tree contacts. Historically, there has been confusion and some of the existing levels of non-compliance incorporate risk impacts or consequences. Going forward, the risk or consequences component should be addressed by the violation risk factor, while the violation severity levels should only be used to categorize how badly the requirement was violated.

The drafting team is instructed to develop a violation risk factor for each requirement in a standard in accordance with the following definitions:

- **High Risk Requirement** — A requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures; or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system instability, separation, or

a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

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

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

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

The drafting team should indicate a set of violation severity levels that can be applied for the requirements within a standard. (“Violation severity levels” replace the existing “levels of non-compliance.”) The violation severity levels may be applied for each requirement or combined to cover multiple requirements, as long as it is clear which requirements are included.

The violation severity levels should be based on the following definition:

- **Level 1: mostly compliant with minor exceptions** — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95 percent to 99 percent compliant.
- **Level 2: mostly compliant with significant exceptions** — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85 percent to 94 percent compliant.
- **Level 3: marginal performance or results** — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70 percent to 84 percent compliant.
- **Level 4: poor performance or results** — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70 percent compliant.

The drafting team should seek inputs and review of all measures and compliance information from the NERC compliance staff. The compliance staff will provide general guidance regarding compliance data retention requirements and other elements of the compliance process.

Fill-in-the-Blank Standards

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

NERC recognized this issue early in the process of developing its application to become the ERO. NERC formed and staffed a program to coordinate the development of regional standards and to address the “fill-in-the-blank” issue. A team with representation from each region was formed and reviewed these particular standards to prepare recommendations for a course of action. The action plan and schedule to resolve each “fill-in-the-blank” standard are provided in Volume III of this plan.

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

Analysis Results	Recommended Action
Insufficient justification for regional differences.	Replace the standard with a uniform North American standard.
Mandatory enforcement is necessary for reliability but regional differences are justified.	Direct the regions to develop their regional criteria as consistent standards to be filed with NERC, FERC, and the applicable authorities in

Mandatory enforcement is not necessary for reliability.	Canada for approval as ERO standards. Retire the NERC standards and allow the regions to maintain voluntary criteria and procedures as needed to coordinate reliability in the region. No enforcement mechanism is provided under the FPA.
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NERC supports the strong preference of the Commission for consistency with regard to regional standards, with statutory deference for regions organized on an interconnection-wide basis as required by statute. NERC will work to achieve that consistency and to provide sufficient justification for regional standards or variations to the NERC standards that are filed for Commission approval.

Undue Negative Impact on Competition

Many of the existing NERC standards are related to business practices, although their primary purpose is reliability. Reliability standards, business practices, and commercial interests are inextricably linked. An example of an existing standard that is both a reliability standard and a business practice is the Transmission Loading Relief Procedure currently used as an interconnection-wide congestion management method in the Eastern Interconnection. It would be safe to conclude that every reliability standard has some degree of commercial impact and therefore impacts competition. The statutory test to be applied by the Commission is whether the reliability standard has an “undue adverse effect” on competition.

NERC has taken several steps to ensure its reliability standards do not have an undue adverse impact on business practices or competition. First, NERC coordinates the development of all standards with the North American Energy Standards Board (NAESB) and the ISO/RTO Council through a memorandum of understanding and the work of the Joint Interface Committee. In addition to this formal process, NERC technical groups work informally with NAESB groups to ensure effective coordination of wholesale electric business practice standards and reliability standards. Recently, NERC and NAESB established a procedure for the joint development of standards in areas that have both reliability and business practice elements, and agreed to jointly publish the results to facilitate access by users of the standards. This procedure is being implemented for all standards in which the reliability and business practice elements are closely related, thereby making joint development a more efficient approach.

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

- Competition — A reliability standard shall not give any market participant an unfair competitive advantage.
- Market Structures — A reliability standard shall neither mandate nor prohibit any specific market structure.
- Market Solutions — A reliability standard shall not preclude market solutions to achieving compliance with that standard.

- **Commercially Sensitive Information** — A reliability standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards.

Additional Considerations

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

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

Appendix A — Work Plan Schedule

