
**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

NOTICE OF PROPOSED RULEMAKING) Docket No. RM07-3-000
FACILITIES DESIGN, CONNECTIONS)
AND MAINTENANCE RELIABILITY)
STANDARDS)

**COMMENTS OF THE
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION
ON THE NOTICE OF PROPOSED RULEMAKING FOR FACILITIES DESIGN,
CONNECTIONS AND MAINTENANCE RELIABILITY STANDARDS**

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I. INTRODUCTION

The North American Electric Reliability Corporation (“NERC”)¹ is pleased to provide these comments in response to the Notice of Proposed Rulemaking (“NOPR”) and commends the Commission’s determination to approve the proposed three reliability standards in accordance with Section 215(d)(1) of the Federal Power Act (“FPA”)² and Section 39.5 of the Commission’s regulations.³ The three proposed standards, FAC-010-1, FAC-011-1, and FAC-014-1, ensure that operating limits developed for use in the planning and operation of the bulk power system apply consistent methods, address certain essential elements, and are available for review by neighboring entities.

The comments that NERC is submitting in this filing support the Commission’s proposed actions and respond to questions posed by the Commission in the NOPR.

¹ The Federal Energy Regulatory Commission (“FERC” or “Commission”) certified NERC Corporation as the electric reliability organization (“ERO”) in its order issued July 20, 2006 in Docket No. RR06-1-000. 116 FERC ¶ 61,062 (July 20, 2006).

² 16 U.S.C. 824o.

³ 18 C.F.R. § 39.5 (2006). *See* NOPR at P 1.

II. NOTICES AND COMMUNICATIONS

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III. BACKGROUND

a. Regulatory Framework

By enacting the Energy Policy Act of 2005,⁴ Congress entrusted the Commission with the duties of approving and enforcing rules to ensure the reliability of the Nation's bulk power system, and with the duties of certifying an ERO that would be charged with developing and enforcing mandatory reliability standards, subject to Commission approval. Section 215 states that all users, owners, and operators of the bulk power system in the United States will be subject to Commission approved reliability standards.

b. Basis for Approval of Additional Proposed Reliability Standards

Section 39.5(a) of the Commission's regulations requires the ERO to file with the

⁴ Energy Policy Act of 2005, Pub. L. No. 109-58, Title XII, Subtitle A, 119 Stat. 594, 941 (2005 (to be codified at 16 U.S.C. § 824o)).

Commission for its approval each reliability standard that the ERO proposes to become mandatory and enforceable in the United States, and each modification to a reliability standard that the ERO proposes to be made effective. The Commission has the regulatory responsibility to approve standards that protect the reliability of the bulk power system. In discharging its responsibility to review, approve, and enforce mandatory reliability standards, the Commission is authorized to approve those proposed standards that meet the criteria detailed by Congress:

The Commission 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.⁵

When evaluating proposed reliability standards, the Commission is expected to give “due weight” to the technical expertise of the ERO. Order No. 672 provides guidance on the factors the Commission will consider when determining whether proposed reliability standards meet the statutory criteria.⁶

c. Reliability Standards Development Procedure

NERC develops reliability standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC reliability standards development procedure, which was incorporated into the Rules of Procedure as Appendix 3A.⁷ In its ERO Certification Order, the Commission found that NERC’s rules provide for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing reliability standards.⁸

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

⁵ Section 215(d)(2) of the FPA, to be codified at 16 U.S.C. § 824o(d)(2) (2000).

⁶ See Order No. 672 at PP 320-36.

⁷ The Commission approved Version 6.1 of the standards development procedure on June 7, 2007 *Order on Compliance Filing*, 119 FERC ¶ 61,248 (2007).

⁸ *Order Certifying NERC*, 116 FERC ¶61,062, P.250.

vote of stakeholders is required to approve a reliability standard for submission to the Commission.

The three proposed standards in this proceeding have been developed and approved by industry stakeholders using NERC's reliability standards development procedure, and were approved by the NERC Board of Trustees on November 1, 2006 for filing with the Commission.

d. Overview of the Facilities Design, Connections and Maintenance (FAC) Standards

On November 15, 2006, NERC filed 20 revised reliability standards and three new reliability standards for Commission approval. The Commission addressed the 20 revised reliability standards in Order No. 693.⁹ The three FAC reliability standards in this proceeding were designated by NERC as follows:

- FAC-010-1 (System Operating Limits Methodology for the Planning Horizon);
- FAC-011-1 (System Operating Limits Methodology for the Operations Horizon);
and
- FAC-014-1 (Establish and Communicate System Operating Limits).

These three reliability standards were assigned to a new rulemaking proceeding, Docket No. RM07-3-000, and they are the subject of the current NOPR.¹⁰

In addition, with the submission of these standards, NERC also proposed the addition or revision of the following terms in the NERC Glossary of Terms Used in Reliability Standards

⁹ On March 16, 2007, the Commission approved 83 of the 107 standards initially filed by NERC. *See Mandatory Reliability Standards for the Bulk-Power System*, Order No. 693, 72 Fed. Reg., 16,416 (April 4, 2007), FERC Statutes and Regulations ¶ 31,242 (2007), *order on reh'g* Order No. 693-A, 120 FERC ¶ 61,053 (2007).

¹⁰ The three reliability standards are not attached to this NOPR but are available on the Commission's eLibrary document retrieval system in Docket No. RM07-3-000 and on NERC's website, http://www.nerc.com/~filez/nerc_filings_ferc.html.

(“NERC Glossary”): “cascading outages,” “delayed fault clearing,” “Interconnection Reliability Operating Limit (IROL),” and “Interconnection Reliability Operating Limit T_v (IROL T_v).”¹¹

These three new standards ensure that system operation limits and interconnection reliability operating limits are developed using consistent methods and that those methods contain certain essential elements. FAC-010-1 requires each planning authority to document its methodology for determining system operating limits and requires the planning authority to share that methodology with reliability entities. FAC-011-1 requires each reliability coordinator to document its methodology for determining system operating limits, including a process for determining which of the stability limits associated with the list of multiple contingencies are applicable for real-time use given the real-time system conditions. FAC-014-1 requires each reliability coordinator, planning authority, transmission planner, and transmission operator to develop and communicate System Operating Limits (“SOLs”) in accordance with the methodologies developed in these associated standards.

In its November 2006 filing of these reliability standards, NERC requested an effective date of July 1, 2007 for reliability standards FAC-010-1, October 1, 2007 for FAC-011-1, and January 1, 2008 for FAC-014-1. To ensure adequate time for compliance with the Final Rule, NERC requests that the Commission adopt an updated effective date of July 1, 2008 for reliability standards FAC-010-1, October 1, 2008 for FAC-011-1, and January 1, 2009 for FAC-014-1.

IV. DISCUSSIONS OF MAJOR ISSUES OUTLINED IN THE NOPR

In its NOPR, the Commission expresses concern regarding the relationship between (i) the three reliability standards that are the subject of this filing, FAC-010-1, FAC-011-1, and

¹¹ In Order No. 693, at PP 1893-98, the Commission approved the NERC Glossary and directed specific modifications to the document.

FAC-014-1, (ii) the Transmission Planning family of Reliability Standards (“TPL” series), and (iii) the Modeling, Data, Analysis family of Reliability Standards (“MOD” series) that pertain to the calculation of Available Transfer Capability (“ATC”). To assist in understanding the relationship between these standards relative to the calculation of SOL, NERC offers the following guidance.

The TPL series of standards set the foundation for the types of contingencies to be considered for standards requirements in the FAC standards. The FAC standards are intended to be consistent with the set of contingencies identified in the TPL standards. The FAC standards for defining facility ratings and system operating limits are then used as the basis for limits that are used in the determination of the ATC values within MOD standards. As the TPL series of standards are modified, conforming changes may need to be made to the FAC and/or MOD series of standards to ensure consistency in the list of contingencies.

NERC will now specifically address the concerns and issues raised by the Commission in its NOPR.

A. FAC-010-1 (System Operating Limits Methodology for the Planning Horizon)

1. Commission Proposal

The Commission proposes to approve reliability standard FAC-010-1 as a mandatory and enforceable reliability standard.¹² In addition, the Commission seeks ERO clarification and public comment on several matters discussed below.

a. Consistency with Order No. 890

In Order No. 890, the Commission amended the *pro forma* open access transmission tariff (OATT) to further reduce and remedy undue discrimination and ensure greater

¹² The Commission expects that the reference to the regional reliability organization as the compliance monitor should be replaced with the term Regional Entity. Order No. 693 at P 157.

transparency in the rules applicable to planning and use of the transmission system.¹³ Among other things, Order No. 890 requires “the consistent use of assumptions underlying operational planning for short-term available transmission capability (ATC) calculations and expansion planning for long-term ATC calculations.”¹⁴

As the Commission properly recognizes, FAC-010-1 requires each planning authority to document its methods for determining system operating limits or SOLs for the planning horizon. SOLs often control or define ATC by determining the outer limit of the operational capability between any two areas or across a transmission path or interface.¹⁵

In the NOPR, the Commission seeks comment on whether the development of a methodology for calculation of SOLs for the planning horizon pursuant to proposed reliability standard FAC-010-1 and the calculation of ATC for the long-term pursuant to NERC’s Modeling, Data, and Analysis (MOD) reliability standards result in the consistent use of assumptions as required by Order No. 890.¹⁶ In short, the answer is yes. In particular, the Commission seeks comment at paragraph 17 on the following questions:

(1) For a given set of conditions, the IROL and SOL values will change with the additional contingencies that are studied. Application of additional first contingencies and multiple contingencies will, in general, result in “Lower” SOL limits as compared to those calculated with either the existing operational or planning contingencies. Is there a potential for the exercise of undue discrimination against transmission customers where, for example, a planning authority’s SOL methodology calls for the application of a single contingency in determining SOLs pursuant to FAC-010-1 and the reliability coordinator and planning authority calculate ATC for the long-term using the assumption of multiple contingencies? Do the Order No. 890 transparency requirements mitigate any potential for the exercise of undue discrimination in this respect?

¹³ See NOPR at P 16 (citing *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 72 FR 12266 (March 15, 2007), FERC Stats. & Regs. ¶ 31,241 (2007), *reh’g pending*).

¹⁴ *Id.* at P 16. (citing Order No. 890 at PP 290-95).

¹⁵ *Id.* at P 17.

¹⁶ *Id.*

(2) In Order No. 693, the Commission required that total transfer capability (TTC) be addressed under the Reliability Standard that deals with transfer capability such as FAC-012-1, rather than MOD-001-0.¹⁷ The Commission disagreed with commenters suggesting that transfer capabilities addressed by FAC-012-1 are necessarily different from TTC used for ATC calculation. In a similar vein, the Commission seeks comment on whether the SOLs developed pursuant to FAC-010-1 are essentially the same as TTC used for ATC calculation. If so, should NERC address SOLs, transfer capability and TTC in a coordinated and consistent manner?¹⁸

NERC has taken steps to ensure consistency between (Step 1) the contingencies and assumptions used to determine SOLs for the planning horizon developed in accordance with the SOL methodology specified in FAC-010-1 and (Step 2) the contingencies and assumptions used by the transmission operator to develop the TTCs that are used to calculate ATC. In addition, NERC also has taken steps to ensure consistency between the contingencies and assumptions used to determine SOLs for the operations horizon, which are developed in accordance with the SOL methodology specified in FAC-011-1 and those used in calculating TTC and ATC.

Regarding Step 1, FAC-010-1 requires that the planning authority have a methodology for developing SOLs and requires that methodology to be made available to all parties having a reliability-related need for the limits or the associated methodology. The SOL methodology must include, among other things, assumptions and contingencies and must require that the transmission owner's facility ratings be respected.

In Order No. 693, the Commission did not approve reliability standard MOD-001-0 — Documentation of Total Transfer Capability and Available Transfer Capability Calculation Methodologies. Rather, the Commission directed that specific improvements be made. Such improvements are currently underway.

¹⁷ See Order No. 693 at PP 1050-52.

¹⁸ NOPR at P 17

Regarding Step 2, an ATC standard drafting team is actively engaged in revising MOD-001-0 that includes a proposed set of three new standards currently under development – MOD-028-1, MOD-029-1 and MOD-030-1. The ATC standard drafting team has drafted requirements that clearly link the three new standards to FAC-010-1 and FAC-011-1 as highlighted below. This will ensure that the contingencies and assumptions used in the planning horizon under FAC-010-1 and the contingencies and assumptions used in the operating horizon under FAC-011-1 are consistent with the contingencies and assumptions used in calculating TTCs and ATCs for various time horizons.

The latest working draft of MOD 028-1, MOD-029-1, and MOD-030-1 each addresses a different methodology currently in use in different parts of North America for calculating both TTC and ATC. These working drafts of the reliability standards are expected to be posted for industry review and comment within the next month. Each of these three methodologies provides a different approach to the calculation of TTC, but all require consistency between the contingencies and assumptions used in the determination of TTC and the contingencies and assumptions used in operating and planning studies used for the same time periods as outlined below.

- Draft reliability standard MOD-028-1 — Area Interchange Methodology requires the transmission operator to document that its model uses the same facility ratings as provided by the transmission owner. It also requires that the assumptions and contingencies used in determining TTC be consistent with those used for the same time horizon in operations and planning studies.
- Draft MOD-029-1 — Rated System Path Methodology requires the transmission operator to document that its model uses the same facility ratings as provided by the transmission

owner. It also requires that the assumptions and contingencies used in determining TTC be consistent with those used for the same time horizon in operations and planning studies.

- Draft MOD-030-1 — Flowgate Methodology requires the transmission operator to document that its model uses the same facility ratings as provided by the transmission owner. It also requires that the assumptions and contingencies used in determining flowgates must match the contingencies and assumptions used in operations studies and planning studies for the applicable time periods.

SOLs developed per FAC-010-1 must be derived from the planning authority's SOL methodology. Both the limits and the associated methodology must be made available to all parties having a reliability-related need for the limits or the methodology. The links between the FAC standards and the MOD standards outlined above support the Commission's directives in Order 890. That is, they support the transparency requirements and mitigate the potential for the exercise of undue discrimination.

In the NOPR, the Commission also seeks comment on whether the SOLs developed pursuant to FAC-010-1 are essentially the same as TTCs used for ATC calculations. The Commission then asks, if SOLs are essentially the same as TTC, should NERC address SOLs, transfer capability and TTC in a coordinated and consistent manner?

SOLs and TTCs are not the same. NERC does not believe that SOLs developed in accordance with the methodology in FAC-010-1 are the same as TTCs used for the ATC calculation. SOLs are an input to, and are considered along with, several other criteria, in "calculating" TTCs.

The Commission has previously approved the following definitions as part of the NERC

Glossary:

System Operating Limit: The value (such as MW, MVar, Amperes, Frequency or Volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. System Operating Limits are based upon certain operating criteria. These include, but are not limited to:

- Facility Ratings (Applicable pre- and post- Contingency equipment or facility ratings)
- Transient Stability Ratings (Applicable pre- and post-Contingency Stability Limits)
- Voltage Stability Ratings (Applicable pre- and post- Contingency Voltage Stability)
- System Voltage Limits (Applicable pre- and post- Contingency Voltage Limits)

Total Transfer Capability: The amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected transmission systems by way of all transmission lines (or paths) between those areas under specified system conditions.

NERC does not believe that SOLs are the same as TTCs used for the ATC calculations, but rather they are foundational to calculating ATC and TTC. The proposed FAC standards and the MOD standards under development already require consistency between one another with respect to assumptions and contingencies and additional coordination is not needed to support the Commission's directives in Order 890.

The links between the FAC standards and the MOD standards outlined above support the Commission's directives in Order 890. That is, they support the transparency requirements and mitigate the potential for the exercise of undue discrimination. Further, SOLs and TTC limits are not the same and no additional coordination is needed to ensure consistency.

b. Western Interconnection Regional Difference

The Commission proposes to approve the regional difference that would apply to the

Western Interconnection regarding the methodology for establishing SOLs.¹⁹ However, the Commission noted that proposed regional difference provides that the Western Interconnection may make changes to the contingencies required to be studied or required responses to contingencies based on actual system performance.²⁰ The Commission noted that “the Reliability Standard does not identify any process for making such changes or indicate whether the requirements for reasonable notice and opportunity for public comment, due process, openness and balance of interests will be met in making such changes.”²¹ Therefore, the Commission proposes “that WECC should identify the process that it will use to make changes to the currently listed contingencies required to be studied or required responses to contingencies.”²² In addition, the Commission seeks comment “on whether the regional difference should be modified to explicitly include the process that WECC will use to make changes to the currently listed contingencies.”²³

WECC has indicated that it will use the a test version of its board approved *Seven Step Process for Performance Category Upgrade Request* to make changes to the contingencies identified in FAC-010-1, Section E, Requirement R1.1 and will follow its bylaws in reviewing and approving the Planning and Coordinating Committee’s recommendations for any contingency changes.²⁴ The *Seven Step Process for Performance Category Upgrade Request* requires that any request for a contingency modification be reviewed and approved by the WECC Reliability Performance Evaluation Working Group, the Planning Coordination Committee and then by the WECC Board. The WECC Bylaws require that due process be

¹⁹ NOPR at P 19.

²⁰ *Id.* at P 20.

²¹ *Id.* (citing 16 U.S.C. 824o(c)(2)(D)).

²² *Id.* at P 20.

²³ *Id.*

²⁴ See http://www.wecc.biz/documents/library/procedures/planning/Seven_Step_Process_BOD_Approved_12-7-04.pdf, in accordance with WECC Bylaws.

See WECC Bylaw at http://www.wecc.biz/documents/library/publications/Revised_Bylaws_Clean_05-06.pdf.

followed as noted below:

Section 8.5.6 of the WECC Bylaw states:²⁵

Notice and Review of Committee Recommendations and Decisions (Due Process). Committee recommendations or decisions delegated to a committee pursuant to Section 6.12 will be subject to the due process provisions of this Section. Following a committee's development of a proposed recommendation or decision, the committee will post the proposed recommendation or decision on the WECC Web site for review and comment by other WECC Members and interested parties. The committee will provide all Members e-mail notification of the posting and will allow at least thirty (30) days for comment on the proposal. The committee will consider all such additional input before reaching its final recommendation or decision. If the committee's recommendation or decision changes significantly as a result of comment received, the committee will post the revised recommendation or decision on the Web site, provide e-mail notification to Members, and provide no less than ten (10) days for additional comment before reaching its final recommendation or decision. Upon reaching its final recommendation or decision, the committee will forward it to the Board. Whenever it determines that a matter requires an urgent decision, the Board may shorten any time period set forth in this Section, provided that: 1) notice and opportunity for comment on recommendations or decisions will be reasonable under the circumstances; and 2) notices to Members will always contain clear notification of the procedures and deadlines for comment.

In the NOPR, the Commission seeks comment on whether the WECC regional difference should be modified to include explicitly the process that WECC will use to make changes to the currently listed contingencies. It is WECC's position that the WECC regional differences in FAC-010-1 should not be modified to include the WECC *Seven Step Process for Performance Category Upgrade Request*. The *Seven Step Process for Performance Category Upgrade Request* is a stand-alone process used for evaluating the probability of an event on a single facility and for adjusting performance requirements of that facility. The process is not used for determining which categories of events are to be considered when rating facilities or for adjusting performance requirements of entire categories.

²⁵ The revised Standards Development Process is scheduled to be submitted with WECC's October 16, 2007 response to the FERC order on the Delegation Agreements. See *North American Electric Reliability Corporation*, 119 FERC ¶ 61,060 (2007).

WECC has indicated that it is not opposed to revising the standard to include a reference similar to the following:

The WECC shall use the latest approved version of its *Seven Step Process for Performance Category Upgrade Request* to make changes (performance category adjustments for individual facilities) to the Contingencies required to be studied and/or the required responses to Contingencies for specific facilities based on actual system performance and robust design. Such changes shall apply in determining system operating limits.

WECC uses the latest version of its board-approved *Seven Step Process for Performance Category Upgrade Request* to make changes to the contingencies identified in FAC-010-1, Section E, Requirement R1.1 for specific facilities and will follow its bylaws in reviewing and approving its committee's recommendations for any contingency changes. NERC agrees that it is not necessary to include the process explicitly in the regional difference.

c. Other Matters

1. Requirement R2.3

In the NOPR, the Commission also seeks clarification regarding the language of FAC-010-1.²⁶ Requirement R2.3 provides that the system's response to a single contingency may include, *inter alia*, "planned or controlled interruption of electric supply to radial customers or some local network customers connected to or supplied by the Faulted Facility or by the affected area."²⁷ The Commission seeks clarification as to "whether this provision is limited to the loss of load that is a direct result of the contingency, *i.e.*, consequential load, or whether this provision allows firm load shedding and firm transmission curtailment following a single contingency."²⁸ The Commission notes that, in Order No. 693, it determined that the single

²⁶ NOPR at P 21.

²⁷ *Id.*

²⁸ *Id.*

contingency provision should allow only the interruption of consequential load.²⁹ Therefore, the Commission seeks confirmation that this proposed reliability standard conforms to its Order No. 693 determination.³⁰

NERC clarifies that the provision in FAC-010-1 Requirement R2.3 is limited to loss of load that is a direct result of the contingency, *i.e.*, consequential load loss.

2. Applicable Entity

a. Planning Entity Terminology

The Commission also notes that the reliability standard identifies the “planning authority” as the applicable entity; however, the most recent iteration of the Functional Model has eliminated the term and now refers to “planning coordinator.”³¹ The Commission requests that NERC explain its plans to make FAC-010-1 consistent with the most recent iteration of the Functional Model, and how this may affect the applicability of the reliability standard to individual entities.³²

While a useful guide, the Functional Model does not define the applicability for compliance with the requirements in NERC’s reliability standards. The applicability for each requirement is specifically defined within each requirement itself. Further, the specified applicability for compliance with each standard is summarized and defined within the applicability section of the standard.

With respect to the planning entity terminology, the NERC Compliance Registration process does not yet include the planning coordinator. At this time, entities have registered to perform the requirements assigned to the “planning authority,” not the “planning coordinator.”

²⁹ *Id.* (citing Order No. 693 at PP 1791-94 (discussing TPL-002-0)).

³⁰ *Id.*

³¹ *Id.* at P 22.

³² *Id.*

Because FAC-010-1, FAC-011-1, and FAC-014-1 assign requirements to the “planning authority,” there is no mismatch between the Compliance Registry and the requirements in these standards. As envisioned, the entities currently registered to assume responsibility for the planning authority function are expected to register to assume responsibility for the “planning coordinator” function.

While Version 3 of the Functional Model uses more wording to define the “planning coordinator” function than Version 2 of the Functional Model used to define the “planning authority,” the intent of the two “functions” is the same.

The definition of the “planning authority,” from Version 2 of the Functional Model is:

Ensures a long-term (generally one year and beyond) plan is available for adequate resources and transmission within a Planning Authority Area. It integrates and assesses the plans from the Transmission Planners and Resource Planners within the Planning Authority Area to ensure those plans meet the reliability standards, and develops and recommends solutions to plans that do not meet those standards.

The definition of the “planning coordinator,” from Version 3 of the Functional Model is:

The Planning Coordinator is responsible for assessing the longer-term reliability of its Planning Coordinator Area. While the area under the purview of a Planning Coordinator may include as few as one Transmission Planner and Resource Planner, the Planning Coordinator’s scope of activities is more “global” than individual system plans. By its very nature, Bulk Electric System planning involves multiple entities. Since all electric systems within an integrated network are electrically connected, whatever one system does can affect the other systems. Planning Coordinators work through a variety of mechanisms to conduct facilitated, coordinated, joint, centralized, or regional planning activities.

While NERC recognizes there will be a need to modify the compliance registration process to include the planning coordinator, in the future, on an interim basis, any requirement assigned to the planning authority is assumed also to apply to the planning

coordinator. Because no approved standards apply to the “planning coordinator” at this time, the modification to the NERC Compliance Registry is not a current issue.

b. Regional Reliability Organization

The Commission directs NERC to remove references to the regional reliability organization as the entity responsible for compliance monitoring and replace it with either the Regional Entity or ERO.³³ NERC will use its reliability standards development process to remove references to the regional reliability organization.

3. TPL Reliability Standards

With respect to Requirement R2.2 of FAC-010-1, the Commission notes that it requires a planning authority to consider various single contingencies including the loss of a shunt device.³⁴ According to the Commission, while the TPL reliability standards implicitly require the consideration of the loss of a shunt device, they do not require this explicitly.³⁵ The Commission seeks comments on whether it should direct NERC to modify the TPL reliability standards to explicitly require the consideration of a shunt device, consistent with FAC-010-1.³⁶

The FAC-010-1, FAC-011-1 and FAC-014-1 standards were developed when TPL-001-0, TPL-002-0, TPL-003-0 and TPL-004-0 were already approved. The TPL series of standards sets the foundation for the types of contingencies to be considered for the FAC standards. The FAC standard drafting team recognized that TPL Table 1 needed clarity. Accordingly, the drafting team modified the language from Table 1 in an effort to add clarity. The intent of the FAC standard drafting team was to use the TPL contingencies as the definitional basis for SOL determination. The contingencies used in the FAC standards are consistent with the

³³ *Id.* (citing Order No. 693 at P 157).

³⁴ NOPR at P 23.

³⁵ *Id.*

³⁶ *Id.*

contingencies identified in the TPL standards, with the exception of the shunt device noted. Note, however, that the TPL standards are currently under revision as part of Project 2006-02 in the *Reliability Standards Work Plan: 2007-2009*. As the TPL standards are modified, conforming changes may need to be made to the FAC standards to maintain consistency between the TPL standards and the FAC standards. But, at this time, NERC does not recommend modifying the TPL standards to include a specific reference to shunt devices based on these FAC standards. A Commission directive to make this change is not necessary.

B. FAC-011-1 (System Operating Limits Methodology for the Operations Horizon)

1. Commission Proposal

In the NOPR, the Commission proposes to approve reliability standard FAC-011-1 as a mandatory and enforceable reliability standard.³⁷ In addition, the Commission seeks clarification and comments on several matters as discussed below.

a. Consistency with Order No. 890

The Commission seeks comments on the following issues:

Is there a potential for the exercise of undue discrimination against transmission customers where, for example, a reliability coordinator's SOL methodology calls for the application of a single contingency in determining SOLs pursuant to FAC-011-1 and the reliability coordinator and planning authority calculate ATC for the short-term using the assumption of multiple contingencies? Do the Order No. 890 transparency requirements mitigate any potential for the exercise of undue discrimination in this respect?

In Order No. 693, the Commission required that TTC be addressed under the Reliability Standard that deals with transfer capability such as FAC-012-1, rather than MOD-001-0.³⁸ The Commission disagreed with commenters suggesting that transfer capabilities addressed by FAC-012-1 are necessarily different from TTC used for ATC calculation. In a similar vein, the Commission seeks comment on whether the SOLs developed pursuant to FAC-011-1 are essentially the same as TTC used for ATC calculation. If so,

³⁷ NOPR at P 28.

³⁸ See Order No. 693 at PP 1050-52.

should NERC address SOLs, transfer capability and TTC in a coordinated and consistent manner?³⁹

NERC has taken steps to ensure consistency between (Step 1) the contingencies and assumptions used to determine SOLs developed in accordance with the SOL Methodology specified in FAC-010-1 and (Step 2) the contingencies and assumptions used to develop the TTCs that are used to calculate ATC. In addition, NERC has taken steps to ensure consistency between the contingencies and assumptions used to determine SOLs which are developed in accordance with the SOL methodology specified in FAC-011-1.

Regarding Step 1, FAC-011-1 requires that the reliability coordinator have a methodology for developing SOLs. It requires that methodology must be made available to all parties having a reliability need for the limits or the associated methodology. The SOL methodology must include, among other things, assumptions and contingencies and must require that the transmission owners' facility ratings be respected.

Regarding Step 2, in Order No.693, the Commission did not approve Reliability Standard MOD-001-0 — Documentation of Total Transfer Capability and Available Transfer Capability Calculation Methodologies. Rather, it directed specific improvements be made that are currently underway. An ATC standard drafting team is actively engaged in revising MOD-001-0 that includes a proposed set of three new standards currently under development – MOD-028-1, MOD-029-1 and MOD-030-1. The working drafts of these new reliability standards are expected to be posted for industry review and comment within the next month. The ATC standard drafting team has drafted requirements that link the three new standards to FAC-010-1 and FAC-011-1 as highlighted below. This ensures that the contingencies and assumptions used in the planning horizon under FAC-010-1 and the contingencies and assumptions used in the

³⁹ NOPR at P 29.

operating horizon under FAC-011-1 are consistent with the contingencies and assumptions used in calculating TTC and ATC for various time horizons.

The latest working drafts of MOD 028-1, MOD-029-1, and MOD-030-1 each address a different methodology currently in use in different parts of North America for calculating both TTC and ATC. Each of these three methodologies provides a different approach to the calculation of TTC, but all require consistency between the contingencies and assumptions used in the determination of TTC, and between the contingencies and assumptions used in operating and planning studies used for the same time periods as outlined below.

- Draft reliability standard MOD-028-1 — Area Interchange Methodology requires the transmission operator to document that its model uses the same facility ratings as provided by the transmission owner. It also requires that the assumptions and contingencies used in determining TTC be consistent with those used for the same time horizon in operations and planning studies.
- Draft MOD-029-1 — Rated System Path Methodology requires the transmission operator to document that its model uses the same facility ratings as provided by the transmission owner. It also requires that the assumptions and contingencies used in determining TTC be consistent with those used for the same time horizon in operations and planning studies.
- Draft MOD-030-1 — Flowgate Methodology requires the transmission operator to document that its model uses the same facility ratings as provided by the transmission owner. It also requires that the assumptions and contingencies used in determining flowgates to match the contingencies and assumptions used in operations studies and planning studies for the applicable time periods. The links between the FAC standards

and the MOD standards outlined above support the Commission's directives in Order 890 regarding the transparency requirements and mitigate potential for the exercise of undue discrimination.

In the NOPR, the Commission asks whether the SOLs developed pursuant to FAC-011-1 are essentially the same as TTCs used for ATC calculations. The Commission then asks, if SOLs are essentially the same as TTC, should NERC address SOLs, transfer capability and TTC in a coordinated and consistent manner?

SOLs and TTCs are not the same. NERC does not believe that SOLs developed in accordance with FAC-011-1 are the same as TTCs used for the ATC calculations. SOLs are an input to, and are considered along with, several other criteria in "calculating" TTCs.

The Commission has previously approved the following definitions as part of the NERC Glossary:

System Operating Limit: The value (such as MW, MVar, Amperes, Frequency or Volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. System Operating Limits are based upon certain operating criteria. These include, but are not limited to:

- Facility Ratings (Applicable pre- and post- Contingency equipment or facility ratings)
- Transient Stability Ratings (Applicable pre- and post-Contingency Stability Limits)
- Voltage Stability Ratings (Applicable pre- and post- Contingency Voltage Stability)
- System Voltage Limits (Applicable pre- and post- Contingency Voltage Limits)

Total Transfer Capability: The amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected transmission systems by way of all transmission lines (or paths) between those areas under specified system conditions.

NERC does not believe that SOLs are the same as TTCs used for the ATC calculations,

but rather they are foundational to calculating ATC and TTC. The proposed FAC standards and the MOD standards under development already require consistency between one another with respect to assumptions and contingencies and additional coordination is not needed to support the Commission's directives in Order 890.

The links between the FAC standards and the MOD standards outlined above support the Commission's directives in Order 890. That is, they support the transparency requirements and mitigate the potential for the exercise of undue discrimination. Further, SOLs and TTC limits are not the same and no additional coordination is needed to ensure consistency.

b. Western Interconnection Regional Difference

In the NOPR, the Commission notes that the detailed list of considerations in the regional difference that would apply to the Western Interconnection appears to be more stringent and detailed than the set of contingencies provided in Requirement R2 of FAC-011-1.⁴⁰ Accordingly, the Commission proposes to approve the regional difference that would apply to the Western Interconnection regarding the methodology for the evaluation of multiple facility contingencies when establishing SOLs.⁴¹

As in the case of FAC-010-1, the Commission expresses concern that the regional difference provides that the Western Interconnection may make changes to the contingencies required to be studied or required responses to contingencies based on actual system performance.⁴² The Commission notes that the reliability standard does not identify any process for making such changes or indicate whether the requirements for reasonable notice and opportunity for public comment, due process, openness and balance of interests will be met in

⁴⁰ NOPR at P 30.

⁴¹ *Id.*

⁴² *Id.* at P 31.

making such changes.⁴³ Thus, the Commission proposes that WECC should identify the process that it will use to make changes to the currently listed contingencies required to be studied or required responses to contingencies.⁴⁴ In addition, the Commission seeks comment on whether the regional difference should be modified to explicitly include the process that WECC will use to make changes to the currently listed contingencies.⁴⁵

WECC has indicated it will use the latest version of its board approved *Seven Step Process for Performance Category Upgrade Request* to make changes to the contingencies identified in FAC-011-1, Section E, Requirement R1.1 and will follow its bylaws in reviewing and approving its Planning and Coordination Committee's recommendations for any contingency changes.⁴⁶ The *Seven Step Process for Performance Category Upgrade Request*, requires that any request for a contingency modification be reviewed and approved by the WECC Reliability Performance Evaluation Working Group, the Planning Coordination Committee and then by the WECC Board. The WECC Bylaws require that due process be followed as noted below.

Section 8.5.6 of the WECC Bylaw states:

Notice and Review of Committee Recommendations and Decisions (Due Process). Committee recommendations or decisions delegated to a committee pursuant to Section 6.12 will be subject to the due process provisions of this Section. Following a committee's development of a proposed recommendation or decision, the committee will post the proposed recommendation or decision on the WECC Web site for review and comment by other WECC Members and interested parties. The committee will provide all Members e-mail notification of the posting and will allow at least thirty (30) days for comment on the proposal. The committee will consider all such additional input before reaching its final recommendation or decision. If the committee's recommendation or decision changes significantly as a result of comment received, the committee will post the revised recommendation or decision on the Web site, provide e-mail notification

⁴³ See 16 U.S.C. 824o(c)(2)(D).

⁴⁴ NOPR at P 31.

⁴⁵ *Id.*

⁴⁶ See http://www.wecc.biz/documents/library/procedures/planning/Seven_Step_Process_BOD_Approved_12-7-04.pdf, in accordance with WECC Bylaws.

See WECC Bylaw at http://www.wecc.biz/documents/library/publications/Revised_Bylaws_Clean_05-06.pdf.

to Members, and provide no less than ten (10) days for additional comment before reaching its final recommendation or decision. Upon reaching its final recommendation or decision, the committee will forward it to the Board. Whenever it determines that a matter requires an urgent decision, the Board may shorten any time period set forth in this Section, provided that: 1) notice and opportunity for comment on recommendations or decisions will be reasonable under the circumstances; and 2) notices to Members will always contain clear notification of the procedures and deadlines for comment.

In the NOPR, the Commission seeks comment on whether the WECC regional difference should be modified to explicitly include the process that WECC will use to make changes to the currently listed contingencies. It is WECC's position that the WECC regional differences in FAC-011-1 should not be modified to include the WECC *Seven Step Process for Performance Category Upgrade Request*, which is a stand-alone process used for evaluating the probability of an event on a single facility and for adjusting performance requirements of that facility. The process is not used for determining which categories of events are to be considered when rating facilities or for adjusting performance requirements of entire categories.

However, WECC has indicated that is not opposed to revising the standard to include a reference similar to the following:

The WECC shall use the latest approved version of its *Seven Step Process for Performance Category Upgrade Request* to make changes (performance category adjustments for individual facilities) to the Contingencies required to be studied and/or the required responses to Contingencies for specific facilities based on actual system performance and robust design. Such changes shall apply in determining system operating limits.

WECC uses the latest version of its board approved *Seven Step Process for Performance Category Upgrade Request* to make changes to the contingencies identified in FAC-011-1, Section E, Requirement R1.1 and will follow its bylaws in reviewing and approving its committee's recommendations for any contingency changes. NERC agrees with WECC that it is not necessary to include the process explicitly in the regional difference.

c. Other Matters

In the NOPR, the Commission notes that Requirement R2.3.2 provides that the system's response to a single contingency may include, *inter alia*, "[i]nterruption of other network customers, only if the system has already been adjusted, or is being adjusted, following at least one prior outage, or, if the real-time operating conditions are more adverse than anticipated in the corresponding studies, *e.g.*, load greater than studied."⁴⁷ The Commission seeks clarification from the ERO regarding the meaning of the phrase "if the real-time operating conditions are more adverse than anticipated in the corresponding studies, *e.g.*, load greater than studied."⁴⁸ In particular, the Commission is concerned whether this provision treats load forecast error as a contingency and as such would allow an interruption due to an inaccurate weather forecast.⁴⁹

When the real-time operating conditions do not match the assumed studied conditions, the deviation can reach a magnitude such that the operator must take actions different from those anticipated by the study. From that perspective, the study error has the same affect on the bulk electric system as many actual contingencies. While these deviations do not meet the approved definition of a "contingency"⁵⁰ in NERC's Glossary, system operators need to react to these unexpected circumstances expeditiously and interruption of other network customers is allowed and expected if conditions warrant such an action.⁵¹ This provision is necessary to ensure that system operators have the ability to shed load without penalty to preserve the integrity of the bulk electric system. Thus, while not classified and studied as a "contingency," a significant gap

⁴⁷ NOPR at P 32.

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ A "contingency" is defined as the unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch or other electrical element.

⁵¹ Except in unusual circumstances, additional resources (operating reserves and demand response) can be timely deployed before firm load shedding is required.

between actual and studied conditions (such as a large error in load forecast) can be treated as though it were a contingency under the proposed standard.

All anticipatory studies must begin with a reasonable set of assumptions. These assumptions would include:

- Existing and scheduled transmission outages for that time period,
- Existing and scheduled generation outages for that time period,
- Projected generation dispatch for that time period,
- Predicted status of voltage control devices, and
- Load level and load diversity for the future time period being scheduled.

When “real time” approaches that time period that was assessed by the particular anticipatory study, real time conditions may not replicate the predicted state. For example,

- Unscheduled transmission outages may have occurred,
- Generation outages may have occurred,
- The system could be operating with one or more Transmission Loading Relief Procedures or other congestion management action such as redispatch in effect requiring a different generation dispatch than anticipated when the applicable study was being conducted,
- The actual load level and load diversity could be different than forecasted and used in the corresponding study, and/or
- The transmission facility loading levels could be significantly higher than studied because any of or all of the conditions above – either on the system being studied or on near-by systems.

FAC-011-1 Requirement R2.3.2 does allow interruption of network customers following a contingency (hence the need for the “adjustment”) and in anticipation of the next potential unscheduled event if the real-time operating conditions are more adverse than anticipated. The adjustment in response to an unscheduled outage or load forecast error, for example, would be to return to a reliable state, recognizing the “now” conditions — available generation, transmission configuration, available reactive resources, load level and load diversity, and conditions on other systems.

Deviations between anticipated conditions and real-time conditions, *e.g.*, load forecast errors, are not contingencies by definition in the NERC Glossary. However, in real-time, the operators must take the actions necessary to maintain bulk electric system reliability given current conditions. Available actions include load shedding if operating conditions warrant.

In the NOPR, the Commission states that NERC must remove references to the regional reliability organization as the entity responsible for compliance monitoring and replace it with either the Regional Entity or ERO. NERC will use its reliability standards development process to remove references to the “regional reliability organization.”

d. TPL Reliability Standards

In the NOPR, the Commission asked if the TPL reliability standards should be modified to explicitly require the consideration of a shunt device, consistent with FAC-011-1.

The FAC-010-1, FAC-011-1 and FAC-014-1 standards were developed when TPL-001-0, TPL-002-0, TPL-003-0, and TPL-004-0 were already approved. The TPL series of standards sets the foundation for the types of contingencies to be considered in the FAC standards. The FAC standard drafting team recognized that TPL Table 1 needed clarity. Therefore, the drafting team modified the language from Table 1 in an effort to add this clarity. The intent of the FAC standard drafting team was to use the TPL contingencies as the definitional basis for SOL determination. The contingencies used in the FAC standards are consistent with the set of contingencies identified in the TPL standards, with the exception of the shunt device noted. Note, however, that the TPL standards are currently under revision as part of Project 2006-02 in the *Reliability Standards Work Plan: 2007-2009*. As the TPL standards are modified, conforming changes may need to be made to the FAC standards to maintain consistency between the TPL standards and the FAC standards. But, at this time, NERC does not recommend

modifying the TPL standards to include a specific reference to shunt devices based on these FAC standards. A Commission directive to make this change is not necessary.

The TPL standards drafting team should be allowed to complete its update of the TPL standards and conforming changes to the FAC standards should be undertaken therewith using NERC's reliability standards development procedure.

C. FAC-014-1 (Establish and Communicate System Operating Limits)

1. Commission Proposal

In the NOPR, the Commission proposes to approve reliability standard FAC-014-1 as a mandatory and enforceable reliability standard.⁵² The Commission notes that the reliability standard fulfills an important reliability goal in the development and communication of SOL limits in accordance with consistent methodologies. However, the Commission states that NERC must remove references to the regional reliability organization as the entity responsible for compliance monitoring and replace it with either the Regional Entity or ERO.⁵³

NERC will use its reliability standards development process to remove references to the “regional reliability organization.”

D. Proposed Definitions

1. Cascading Outages

In the NOPR, the Commission notes that the current definition of Cascading Outages in the approved NERC Glossary is “The uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread electric service interruption that cannot be restrained from sequentially spreading beyond an area predetermined by studies.”⁵⁴

⁵² NOPR at P 37.

⁵³ *Id.* (citing Order No. 693 at P 157).

⁵⁴ *Id.* at P 40 (citing NERC April 4, 2006 Request for Approval of Reliability Standards, Glossary of Terms Used in Reliability Standards at 2).

According to the Commission,

The ambiguity in the term relates to the last phrase in the definition which identifies the extent of an outage that would be considered a cascade. The revised definition uses the similar phrase “a pre-determined area” which may lead to different interpretations. The Commission understands that this phrase has been interpreted as being as small as the elements that would be removed from service by local protective relays to as large as the entire balancing authority. Simply put, some applications of Cascading Outage could allow the loss of an entire balancing authority and not consider that loss to be a Cascading Outage. The Commission disagrees with such a liberal application. For purposes of compliance, the Commission proposes to direct NERC to consider the loss of facilities in the bulk electric systems that are beyond those that would be removed from service by primary or backup protective relaying associated with the initiating event to be a Cascading Outage. With this understanding of the phrase, the Commission proposes to accept the definition in FAC-014.⁵⁵

NERC is not in agreement with the Commission’s interpretation of the term “Cascading Outage.” The definition of “cascading outage” was not intended to identify attributes of an event such as scope, risk or acceptable impact. The proposed definition was designed to provide a classification for the event.

NERC agrees that the definition of Cascading Outage was not intended to allow for the loss of an entire balancing authority unless such an area conforms to the area predetermined by studies. Thereby, NERC agrees with the Commission’s obvious concern. However, there are additional “safety nets” that are intentionally added to the system that are intended to confine an outage to a pre-set area of the Bulk Electric System (BES). These include special protection systems, remedial action schemes, and underfrequency and undervoltage load shedding applications. The Commission’s interpretation does not permit the inclusion of these systems that are well-studied before they are applied in practice.

The Commission’s proposed interpretation would result in excess number of outages being defined as a “Cascading Outage,” even if the “end-state” of the system event were exactly

⁵⁵ *Id.*

as planned or anticipated for the given event. Further, the implication of applying the Commission's definition to the TPL evaluations required in Table 1 would be extraordinary in scope and impact. The cost associated with stopping all events at the first backup protective relay would be extremely prohibitive when more widespread applications can be employed to control an outage event. The BES has been designed to include separations that are larger than the backup protection surrounding the event to protect the BES against further propagation of the outages. The definition of cascading should not be changed without careful deliberation and study by appropriate industry technical groups to weigh the substantial impact for complying with any change in definition relative to the perceived benefit to reliability. Additionally, the Commission's interpretation is in conflict with Table 1 in the TPL-001-0 through TPL-004-0 reliability standards that the Commission approved in Order 693. For category C events resulting in the loss of two or more (multiple) elements, a single-line-to-ground fault with delayed clearing event by description would establish an outage boundary beyond primary or backup protective system of the equipment initiating the event. Yet, the associated column indicates that cascading outages are not allowed under this scenario. This presents a conflict between the Commission's proposed interpretation of "cascading outages" and the Table 1 requirements that have been approved by the Commission as mandatory and enforceable.

NERC, therefore, recommends that the Commission reconsider its proposed interpretation of "cascading outages." Further, if the definition is changed, a review of all NERC reliability standards that rely on the "cascading outage" definition must be undertaken to be certain that the intent of the standards did not change with the definition of cascading.

2. IROL

The definition of IROL in the approved NERC Glossary is “The value (such as MW, MVar, Amperes, Frequency or Volts) derived from, or a subset of the System Operating Limits, which if exceeded, could expose a widespread area of the Bulk Electric System to instability, uncontrolled separation(s) or cascading outages.”⁵⁶ According to the Commission:

The revised definition is consistent with the intent of the statute with the exception of the phrase “that adversely impacts the reliability of the bulk electric system.” This may give the impression that violation of some IROLs that do not adversely impact the reliability of the bulk electric system are acceptable. The Commission proposes to accept the definition in FAC-014 with the understanding that all IROLs impact bulk electric system reliability.⁵⁷

NERC agrees with the Commission’s interpretation of the definition of IROL. An appropriate reading of the IROL definition does require that it impact reliability, otherwise it is not an IROL. It does not suggest that there is a subclass of IROLs that do not impact reliability.

3. IROL T_v

In Order No. 693, the Commission identified two possible interpretations of when an entity exceeds an IROL.⁵⁸ The definition of IROL T_v does not distinguish between those two interpretations. The Commission proposes to accept the definition in FAC-014 with the understanding that the only time it is acceptable to violate an IROL is in the limited time after a contingency has occurred and the operators are taking action to eliminate the violation.

NERC agrees with the Commission’s interpretation of IROL T_v that the only time it is acceptable to violate an IROL is in the limited time after a contingency has occurred and the operators are taking action to eliminate the violation.

⁵⁶ *Id.* at 42.

⁵⁷ *Id.*

⁵⁸ *Id.* at P 43 (*citing* Order No. 693 at P 946 & n.303).

E. Violation Risk Factors

In the *Violation Risk Factor Order*, the Commission addressed Violation Risk Factors filed by NERC for Version 0 and Version 1 Reliability Standards. In that order, the Commission used five guidelines for evaluating the validity of each Violation Risk Factor assignment: (1) consistency with the conclusions of the Final Report on the August 14, 2003 blackout in the United States and Canada, (2) consistency within a reliability standard, (3) consistency among reliability standards with similar Requirements, (4) consistency with NERC's proposed definition of the Violation Risk Factor level, and (5) assignment of Violation Risk Factor levels to those Requirements in certain reliability standards that co-mingle a higher risk reliability objective and a lower risk reliability objective.⁵⁹

1. WECC Regional Differences

In the NOPR, the Commission proposes to approve most of the Violation Risk Factors for reliability standards FAC-010-1, FAC-011-1 and FAC-014-1 that NERC identified in its March 23, 2007 filing.⁶⁰ However, the Commission expresses concern with several of the Violation Risk Factors submitted for reliability standards FAC-010-1, FAC-011-1 and FAC-014-1.⁶¹ First, the Commission notes that there are no Violation Risk Factors applicable to the WECC regional differences and that certain portions of the WECC regional differences lack levels of non-compliance.⁶² The Commission requests comment on whether it should require WECC to develop Violation Risk Factors and the levels of non-compliance for the regional

⁵⁹*Id.* at P 46.

⁶⁰ NOPR at P 47.

⁶¹*Id.*

⁶²*Id.*

differences.⁶³ If so, the Commission requests comment on how WECC should assess penalties in the interim.⁶⁴

WECC believes that it should be required to develop Violation Risk Factors for its regional differences. FAC-010-1 and FAC-011-1 currently include levels of non-compliance for all of the WECC regional differences. The standards identify applicable levels of non-compliance for entities within the Western Interconnection. Section 3.2 (level 2) and Section 3.3.2 (level 3) of FAC-010-1 and FAC-011-1 address the consequences of failing to meet the regional difference requirements.

WECC will initiate efforts to develop Violation Risk Factors for the regional differences identified in FAC-010-1 and FAC-011-1. In the interim, WECC proposes to assess penalties for non-compliance by adopting the same Violation Risk Factor for each WECC regional differences as is identified for NERC Requirements R2.4 and R2.5 for FAC-010-0 and Requirement R3.3 for FAC-011-1 that the WECC regional differences replace. It is WECC's intention to propose that the WECC regional differences should have the same Violation Risk Factors as NERC Requirements R2.4 and R2.5 in FAC-010-1 and Requirement R3.3 for FAC-011-1 when it goes through its process to develop the Violation Risk Factors.

2. FAC-010-1 Requirement R2

With respect to FAC-010-1, the Commission proposes to direct NERC to modify the “Lower” Violation Risk Factor assigned to Requirement R2 and the “Medium” Violation Risk Factor assigned to sub-Requirements R2.1 through R2.2.3 based on guideline (4).⁶⁵ According

⁶³*Id.*

⁶⁴*Id.*

⁶⁵*Id.* at P 48.

to the Commission, this was developed to evaluate whether the assignment of a particular Violation Risk Factor level conforms to NERC's definition of that risk level.⁶⁶

NERC agrees that the Violation Risk Factor assignment for Requirement R2 merits reconsideration and will process this proposed change through the Commission-approved reliability standards development process.

Requirement R2 of FAC-010-1 identifies what must be included in the planning authority's SOL methodology. Requirement R2 does not include any obligations to conduct analyses or assessments. Requirement R2 merely lists topics that must be included in the SOL methodology. The requirements to follow the methodology in setting the SOLs are included in FAC-014-1.

If FAC-010-1 Requirement R2 were violated, the bulk power system would not result in instability, separation, or cascading failures in real-time. All of the uses of the SOLs developed with the methodology in FAC-010-1 are for planning purposes. A failure to comply with Requirement R2 and its sub-requirements may, over the long term, impact the ability to effectively monitor, control, or restore the bulk power system, but a violation of these requirements is unlikely to lead to bulk power system instability, separation, or cascading failures.

While NERC agrees that the Violation Risk Factor assignment for Requirement R2 merits reconsideration and will process this proposed change through the Commission-approved reliability standards development process, NERC disagrees that the Violation Risk Factor should be set to "High."

⁶⁶*Id.*

3. FAC-010-1 Requirement R2.1

In the NOPR, the Commission notes that FAC-010-1 Requirement R2 requires the planning authority's SOL methodology to include a requirement that SOLs provide bulk electric system performance consistent with a stable pre-contingency (sub-Requirement R2.1) and post-contingency (sub-Requirements 2.2 through R2.2.3) bulk electric system using an accurate system topology with all facilities operating within their ratings and without post-contingency cascading outages or uncontrolled separation.⁶⁷

The Commission believes that NERC's assignment of a "Lower" Violation Risk Factor to Requirement R2.1, which requires the bulk electric system in a pre-contingency state and with all facilities in service to demonstrate transient, dynamic and voltage stability, is inappropriate.⁶⁸ A violation of a "Lower" Violation Risk Factor, by definition, is generally considered administrative in nature and would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control or restore the bulk power system.⁶⁹ The Commission believes that the "Lower" Violation Risk Factor NERC proposes for this Requirement is not consistent with the "Lower" definition, but consistent with the definition of "High."⁷⁰ The Commission believes that a violation of Requirement R2.1 could directly cause or contribute to bulk power system instability, separation or cascading failures since a violation of Requirement R2.1 means that the system is in an unreliable state even before the system is subject to respond to a contingency.⁷¹ Therefore, the Commission proposes to require NERC to change the Violation Risk Factor of Requirement R.2.1 to "High."⁷²

⁶⁷*Id.* at P 49.

⁶⁸*Id.* at P 50.

⁶⁹*Id.*

⁷⁰*Id.*

⁷¹*Id.*

⁷²*Id.*

NERC assigned FAC-010-1 Requirement R2.1 a “Medium” Violation Risk Factor and does not agree that this should be changed to “High.” NERC believes that reliability-related risk associated with violating Requirement 2 or any of its sub-requirements, is “Medium,” not “High.”

FAC-010-1 Requirement R2.1 identifies one of several topics that must be included in the planning authority’s SOL methodology. FAC-010-1 Requirement R2.1 does not include any requirements to conduct analyses or assessments. If FAC-010-1 Requirement R2.1 were violated, the bulk power system would not result in instability, separation, or cascading failures in real-time.

All of the uses of the SOLs developed with the methodology in FAC-010-1 are for planning purposes. A failure to comply with the requirements in FAC-010-1 may, over the long term, impact the ability to effectively monitor, control, or restore the bulk-power system, but a violation of these requirements is unlikely to lead to bulk-power system instability, separation, or cascading failures, consistent with a “Medium” Violation Risk Factor assignment.

4. FAC-010-1 Requirement R2.2

With respect to NERC assignment of a “Medium” Violation Risk Factor to FAC-010-1 Requirement R2.2, the Commission states this would be appropriate if a violation is unlikely to lead to bulk power system instability, separation or cascading failures.⁷³ However, the Commission notes that Requirement R2.2 specifically states that with regard to post-contingency bulk electric system performance, “[c]ascading outages or uncontrolled separation shall not occur.”⁷⁴ Therefore, if Requirement R2.2 is violated for any one of the specific contingencies as described in Requirements R2.2.1 through R2.2.3, cascading outages or uncontrolled separation

⁷³ *Id.* at P 51 (citing *Violation Risk Factor Order*, 119 FERC ¶ 61,145 at P 9).

⁷⁴ *Id.*

of the bulk power system may occur.⁷⁵ According to the Commission, the potential risk a violation of Requirement R2.2 poses to the bulk power system is not consistent with the definition of a “Medium” Violation Risk Factor.⁷⁶ Rather, the Commission states that the risk a violation of Requirement R2.2 presents to the bulk power system is consistent with the definition of a “High” Violation Risk Factor.⁷⁷ Therefore, the Commission proposes to require NERC to change the Violation Risk Factor of Requirement R2.2 to “High.”⁷⁸

NERC does not agree that the Violation Risk Factor for Requirement R2.2 should be changed from “Medium” to “High.” NERC believes that reliability-related risk associated with violating Requirement R2 or any of its sub-requirements, is “Medium,” not “High.”

FAC-010-1 Requirement R2.2 identifies one of several topics that must be included in the planning authority’s SOL methodology. FAC-010-1 Requirement R2.2 does not include any requirements to conduct analyses or assessments. If FAC-010-1 Requirement R2.2 were violated, the bulk power system would not result in instability, separation, or cascading failures in real-time.

All of the uses of the SOLs developed with the methodology in FAC-010-1 are for planning purposes. A failure to comply with these requirements may, over the long term, impact the ability to effectively monitor, control, or restore the bulk-power system, but a violation of these requirements is unlikely to lead to bulk-power system instability, separation, or cascading failures. Thus, a violation of FAC-010-1 Requirement R2.2 appropriately meets NERC’s criteria for a “Medium” Violation Risk Factor.

⁷⁵*Id.*

⁷⁶*Id.*

⁷⁷*Id.*

⁷⁸*Id.*

5. **FAC-010-1 Requirement R2 and Sub-requirements**

Citing its *Violation Risk Factor Order*, the Commission states it expects a rational connection between the sub-Requirement Violation Risk Factor assignments and the main Requirement Violation Risk Factor assignment.⁷⁹ The Commission reiterates its proposal to require NERC to modify the Violation Risk Factors for the sub-requirements of Requirement R2, to have a rational connection between the Violation Risk Factors assigned to sub-Requirements and Violation Risk Factors assigned to the main Requirement.⁸⁰ In addition, the Commission proposes to require NERC to change the Violation Risk Factor for Requirement R2 to “High.”

NERC believes that Requirement R2 should only have a single Violation Risk Factor and this should be “Medium.” Requirement R2, without its sub-requirements, includes no required performance or outcome. As stated above, the failure to have a methodology that is only used in the planning horizon will not lead to bulk power system instability, separation, or cascading failures in real-time.

NERC does agree that the Violation Risk Factor assignment for Requirement R2 merits reconsideration from its “Lower” assignment but NERC does not agree with the Commission that the Violation Risk Factor assignment for the sub-requirements should be changed from “Medium” to “High.” NERC will process the proposed reconsideration of the Violation Risk Factor assigned to FAC-010-1 Requirement R2 through its Commission-approved reliability standards development process.

6. **FAC-011-1 Requirement R2 and Sub-requirements**

Similarly, the Commission expresses has the same concern and proposal to reassign NERC’s Violation Risk Factors for FAC-011-1 Requirement R2 and sub-Requirements R2.1

⁷⁹ *Id.* at P 52.

⁸⁰ *Id.*

through R2.2.3, which contain similar language as the corresponding Requirements in FAC-010-1.⁸¹

In the NOPR, the Commission proposed directing NERC to modify the Violation Risk Factors assigned to FAC-011-1 Requirement R2 and its sub-requirements to “High.”

NERC agrees that the FAC-011-1 Requirement R2 and its sub-requirements merit consideration for a “High” Violation Risk Factor assignment. NERC will process this proposed change through its reliability standard development process. If the methodology for setting real-time limits is not correct, then the resultant real-time limits may be incorrect and operating to these incorrect limits could directly lead to bulk power system instability, separation, or cascading failures.

7. FAC-014-1 Requirement R5 and Sub-requirements

With regard to FAC-014-1, the Commission expresses concerns with NERC’s proposed Violation Risk Factor assignment of “Medium” to Requirement R5 and sub-requirements R5.1 through R5.1.4.⁸² Requirement R5 requires that the reliability coordinator, planning authority and transmission planner each provide its SOLs and IROLs to those entities that have a reliability-related need for those limits and provide a written request that includes a schedule for delivery of those limits. Sub-Requirements R5.1 through R5.1.4 comprise the list of supporting information to be provided. The Commission has concerns with NERC’s proposed assignment based on its lack of consistency with the Final Blackout Report.

In addition, the Commission reiterates that it is important to ensure that critical areas identified as causes of the August 2003 and other previous major blackouts are appropriately

⁸¹*Id.* at P 53.

⁸²*Id.* at P 54.

assigned as potential risks to the reliability of the bulk power system.⁸³ The Commission notes, for example, the Final Blackout Report identified ineffective communications as one common factor of the August 2003 blackout and other previous major blackouts.⁸⁴ As the Commission observes, the Final Blackout Report explained that, “[u]nder normal conditions, parties with reliability responsibility need to communicate important and prioritized information to each other in a timely way, to help preserve the integrity of the grid.”⁸⁵

The Commission states that NERC’s proposed Violation Risk Factor assignment of “Medium” for the subject Requirements is not consistent with the findings of the Final Blackout Report.⁸⁶ By definition, a “Medium” Violation Risk Factor designation means that a violation of the requirement is unlikely to lead to bulk power system instability, separation or cascading failures.⁸⁷ According to the Commission, findings of the Final Blackout Report, as well as reports on other previous major blackouts, have determined otherwise in that the timely communication of important and prioritized information, in this case, SOLs and IROLs, to entities that have a reliability-related need for those limits are crucial in maintaining the reliability of the bulk power system.⁸⁸

Accordingly, the Commission proposes to require NERC to assign FAC-014-1 Requirement R5, as well as sub-Requirements R5.1 through R5.1.4, a “High” Violation Risk Factor to reflect the potential risk a violation of the subject requirements presents to the bulk power system.⁸⁹

⁸³*Id.* at P 55.

⁸⁴*Id.* (citing Final Blackout Report at 107).

⁸⁵*Id.* (citing Final Blackout Report at 109).

⁸⁶*Id.* at P 56.

⁸⁷*Id.* (citing *Violation Risk Factor Order* at P 9).

⁸⁸*Id.*

⁸⁹*Id.* at P 57.

NERC does not agree with this proposed change. The reliability coordinator is responsible for identifying IROLs in its reliability coordinator area and has responsibility and authority to act to prevent exceeding an IROL that studies or analyses have shown could occur in the near future. The reliability coordinator also has responsibility and authority to resolve any IROL that is related to facilities under its control. The exercise of this authority in determining if the limits are being respected and directing actions to prevent and/or mitigate instances of exceeding IROLs are requirements that should be supported with a “High” Violation Risk Factor assignment. The failure to provide the limit information to others, by itself, while important, does not equate to the expectation that the system will become unstable, separate, or cascade. Therefore, NERC does not agree that the Violation Risk Factors for FAC-014-1 Requirement R5 and its sub-requirements should be rated as “High.”

While failure to act to prevent and/or mitigate an instance of exceeding an IROL is expected to result in adverse system consequences, FAC-014-1 Requirement R5 is not aimed at the action of preventing and/or mitigating an IROL. Rather, FAC-014-1 Requirement R5 is aimed at communicating information to others. NERC agrees that effective communication is one factor that can contribute to bulk power system instability, separation, or cascading failures. NERC does not agree that the failure to communicate the actual or potential existence of SOLs and IROLs to those entities that are **not required** to resolve those limits will result in bulk power system instability, separation, or cascading. NERC maintains its position that the impact of not notifying adjacent entities of an actual or potential IROL is a “Medium” risk as it impacts the ability of neighboring entities to effectively monitor the bulk power system. Further, note that IRO-015-1 Requirement R1 requires that the reliability coordinator to make notifications and exchange reliability-related information with other reliability coordinators. This requirement

was approved by the Commission with the “Medium” Violation Risk Factor assignment. This FAC-014-1 Requirement R5 is of a similar nature to IRO-015-1 Requirement R1.

NERC believes wholeheartedly that communication between operating entities is important, but on its own merits, it does not support assignment of a “High” Violation Risk Factor. The responsibility for acting to prevent and/or mitigate an instance of exceeding an IROL is addressed in other standards. Therefore, NERC does not agree with the change in Violation Risk Factor suggested by the Commission.

V. CONCLUSIONS AND ACTIONS REQUESTED OF THE COMMISSION

NERC appreciates the opportunity to submit these comments and urges the Commission to take action consistent with the comments herein. Specifically, NERC proposes that the Commission take the following action in its Final Rule:

1. NERC requests the Commission to adopt an updated effective date of July 1, 2008 for reliability standards FAC-010-1, October 1, 2008 for FAC-011-1, and January 1, 2009 for FAC-014-1.
2. NERC believes that FAC-010-1 and FAC-011-1 and the standards currently under development for calculation of TTC (MOD-028-1, MOD-029-1, MOD-030-1) support the Commission’s directives in Order No. 890 for consistent use of assumptions and that no further coordination is needed.
3. NERC believes that SOLs developed pursuant to FAC-010-1 are not the same as TTC used in the calculation of ATC and that no further direction is needed.
4. NERC believes that the TPL set of reliability standards provide the foundation for the types of contingencies to be considered for standards requirements in the FAC standards. As such, any change made to the set of contingencies in the TPL standards must be

subsequently reflected in FAC-010-1 and FAC-011-1. The proposed FAC-010-1 and FAC-011-1 use a set of contingencies consistent with the contingencies identified in the version of the TPL standards approved by the Commission. Although the language used to describe the contingencies is not identical when comparing the FAC standards with the TPL standards, the intent of the contingencies is the same in both sets of standards.

NERC requests that the Commission refrain from directing modifications to either the TPL standards or to FAC-010-1 and FAC-011-1 to make the language used to define contingencies identical. The TPL standards are currently under revision, and once approved, conforming changes will be made, if needed, to the FAC standards.

5. NERC has confirmed that FAC-010-1 Requirement R2.3 that provides the system's response to a single contingency is limited to the loss of load that is a direct result of the contingency.
6. NERC requests that the Commission recommend that modifications be made to FAC-010-1, FAC-011-1, and FAC-014-1 through the reliability standards development process to remove references to the title, "Regional Reliability Organization."
7. NERC requests that the Commission recommend that modifications be made to the WECC regional difference in FAC-010-1 through the reliability standards development process to (i) reference the specific process that will be used to approve performance category adjustments and (ii) add Violation Risk Factors. NERC encourages the Commission to refrain from requiring inclusion of the WECC process used to modify performance category adjustments in the body of the standard as this makes it difficult to keep the standard up-to-date.

8. NERC requests that the Commission recommend that modifications be made to the WECC regional difference in FAC-011-1 through the reliability standards development process to (i) reference the specific process that will be used to approve performance category adjustments and (ii) add Violation Risk Factors. NERC encourages the Commission to refrain from requiring inclusion of the WECC process used to modify performance category adjustments in the body of the standard as this makes it difficult to keep the standard up-to-date.
9. NERC clarified that in FAC-011-1, although not classified specifically as a “contingency” in situations where the studied conditions do not match the real-time conditions, interruption of network customers is allowed. This provision is necessary to ensure that system operators have the ability to shed load without penalty to preserve the integrity of the BES.
10. NERC requests that the Commission decline to modify the definition of Cascading Outage as the proposed modification does not give consideration to the acceptability of the many remedies used to control or limit the extent of outages. Such modification, may be in direct conflict with Table 1 in the TPL series of reliability standards. Changing the definition could require extensive revisions to many other standards that have been approved based on a different interpretation of the terms, “Cascading” and “Cascading Outage.”
11. NERC clarifies that it supports the Commission’s interpretation of the definition of IROLs and agrees that all IROLs adversely impact bulk electric system reliability.
12. NERC agrees that FAC-010-1 Requirement R2 merits reconsideration from its “Lower” Violation Risk Factor assignment but disagrees with the Commission that Requirement

R2 and all of its sub-requirements should be rated with “High” Violation Risk Factors. Requirement R2 is a requirement to develop a methodology for setting SOLs for use in the planning horizon. A violation of Requirement R2 or a violation of any of the associated sub-requirements, will not lead to instability, separation, or cascading failures. The failure to have a methodology or the failure to have all the required elements of the methodology, could result in a BES that is not as robust as desired but will not lead to instability, separation, or cascading failures. NERC will utilize its reliability standards development process to address this modification.

13. NERC agrees with the Commission that FAC-011-1 Requirement R2 should be reconsidered from its “Medium” Violation Risk Factor rating since a violation of this requirement could result in a methodology that is incorrect and operating to incorrectly set SOLs could lead to instability, separation, or cascading failures. NERC will utilize its reliability standards development process to address this modification.
14. NERC requests that the Commission decline to recommend that modifications be made to the Violation Risk Factors assigned to FAC-014-1 Requirement R5. Under Requirement R5 the entities that develop SOLs must distribute these limits to the entities that requested them. The only “critical” limits used in real-time are the IROLs developed by the reliability coordinator. The responsibility for resolving these IROLs rests with the same reliability coordinator that is responsible for distributing the information.

Respectfully submitted,

/s/ Rebecca J. Michael

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