

1/17/07 Standard Authorization Request Form

Title of Proposed Project: Revisions to TPL-001 through TPL-006, Transmission System Performance and Assessment (This SAR is intended to supplement the SAR for Assess Transmission Future Needs and Develop Transmission Plans dated 4/30/06 in support of Standards Project 2006-02.)	
Request Date	January 17, 2007
Revised	April 5, 2006

SAR Requestor Information	SAR Type <i>(Check a box for each one that applies.)</i>
Name Assess Transmission Future Needs Standard Drafting Team	<input type="checkbox"/> New Standard
Primary Contact Robert Millard – Vice-Chair, ATFNSTD	<input checked="" type="checkbox"/> Revision to existing Standards
Telephone (708) 588-9886 Fax none	<input checked="" type="checkbox"/> Withdrawal of existing Standard (possible)
E-mail bob.millard@rfirst.org	<input type="checkbox"/> Urgent Action

Purpose (Describe the purpose of the standard — what the standard will achieve in support of reliability.)

This SAR is intended to supplement the SAR for Assess Transmission Future Needs and Develop Transmission Plans dated 4/30/06 in support of Standards Project 2006-02.

The revisions to the following standards would improve technical clarity and address concerns identified by stakeholders and FERC:

- TPL-001 — System Performance under Normal Conditions
- TPL-002 — System Performance Following Loss of a Single BES Element
- TPL-003 — System Performance Following Loss of Two or More BES Elements
- TPL-004 — System Performance Following Extreme BES Events
- TPL-005 — Regional and Interregional Self-Assessment Reliability Reports
- TPL-006 — Data from the Regional Reliability Organization Needed to Assess Reliability

Revisions to TPL-001 through TPL-004 are already underway (Assess Transmission Future Needs and Develop Transmission Plans Standard Drafting Team) with the primary focus to clarify the associated Table 1, Transmission System Standards – Normal and Emergency Conditions, used to identify the criteria for system assessments. The expansion of the work already underway with TPL-001 through TPL-004 will focus on the general improvements to the standard identified through the attached *Appendix A: Reliability Standard Review Guidelines* and the FERC and stakeholder concerns identified in the attached *Appendix B: TPL-001 through TPL-006 Technical Issues List*.

TPL-005 and TPL-006, which require regional and inter-regional assessments based on the system performance requirements stated in TPL-001 through TPL-004, need to be modified or retired to address the “fill-in-the blank” components and establish requirements within the standards or through a contractual arrangement as to which entity should perform and provide the subject assessment and data. If these requirements are addressed through the delegation agreements each Region has with the Electric Reliability Organization (ERO), TPL-005 and TPL-006 could be retired.

The purpose of modifying this set of standards is to:

1. Provide an adequate level of reliability for the North American bulk power systems — ensure each of the standards is complete and the requirements are set at an appropriate level to ensure reliability.
2. Ensure each of the standards is enforceable as a mandatory reliability standard with financial penalties — the applicability to bulk power system owners, operators, and users, and as appropriate particular classes of facilities, is clearly defined; the purpose, requirements, and measures are results-focused and unambiguous; the consequences of violating the requirements are clear.
3. Make general improvements using the Reliability Standard Review Guidelines and consider the items mentioned in the Technical Issues Lists prepared by the NERC staff which attempt to capture comments from the:
 - FERC NOPR (Docket # RM06-16-00 dated October 20, 2006) ,
 - FERC staff report dated May 11, 2006 concerning NERC standards submitted with ERO application,

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- Version 0 and Phase 3&4 standards development (see note 1),
- Violations Risk Factors (VRF) drafting team (see note 1),
- Regional Fill-in-the-Blank Team (RRSWG – a NERC working group involved with regional standards development), and
- Draft SAR for Planning Authority

The SDT should also consider any other issues that were not completely captured but were stated or referenced in the above materials.

Directions extracted from FERC Order 693, 890 and other applicable orders and any possible future subsequent revisions will be addressed by the SDT.

Note 1: Comments received from the industry during public postings of the TPL subject matter were sometimes outside the work being posted or outside the drafting team's scope and were not reflected in the drafting of the final work product. These should now be considered by this SDT.

Industry Need (Provide a detailed statement justifying the need for the proposed standard, along with any supporting documentation.)

The six standards in this set are all Version 0 standards. As the ERO begins enforcing compliance with reliability standards under Section 215 of the Federal Power Act in the United States and applicable statutes and regulations in Canada, the industry needs a set of clear, measurable, and enforceable reliability standards. The Version 0 standards, while a good foundation, were translated from historical operating and planning policies and guides that were appropriate in an era of voluntary compliance. The Version 0 standards and recent updates were put in place as a temporary starting point to start-up the ERO and begin enforcement of mandatory standards. However, it is important to update the standards in a timely manner, incorporating improvements to make the standards more suitable for enforcement and to capture prior recommendations that were deferred during the Version 0 translation and any subsequent standards development that have implications to the TPL standards.

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Brief Description: (Describe the proposed standard in sufficient detail to clearly define the scope in a manner that can be easily understood by others.)

The proposed work effort will address three main issues:

1. Conformance to the new rules and regulations brought about by Section 215 of the Federal Power Act and the creation of the ERO,
2. Supplement the approved work of the existing ATFNSDT to include the necessary revisions to TPL-005 & TPL-006, and
3. Address technical issues raised by FERC and industry stakeholders.

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Reliability Functions

The Standard will Apply to the Following Functions <i>(Check box for each one that applies.)</i>		
<input checked="" type="checkbox"/>	Reliability Coordinator	Responsible for the real-time operating reliability of its Reliability Coordinator Area in coordination with its neighboring Reliability Coordinator's wide area view.
<input type="checkbox"/>	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within a Balancing Authority Area and supports Interconnection frequency in real time.
<input type="checkbox"/>	Interchange Authority	Ensures communication of interchange transactions for reliability evaluation purposes and coordinates implementation of valid and balanced interchange schedules between Balancing Authority Areas.
<input checked="" type="checkbox"/>	Planning Coordinator	Assesses the longer-term reliability of its Planning Coordinator Area.
<input checked="" type="checkbox"/>	Resource Planner	Develops a (>one year) plan for the resource adequacy of its specific loads within its portion of a Planning Coordinator area.
<input checked="" type="checkbox"/>	Transmission Planner	Develops a (>one year) plan for the reliability of the interconnected Bulk Electric System within its portion of the Planning Coordinator area.
<input type="checkbox"/>	Transmission Service Provider	Administers the transmission tariff and provides transmission services under applicable transmission service agreements (e.g., the pro forma tariff).
<input checked="" type="checkbox"/>	Transmission Owner	Owns and maintains transmission facilities.
<input type="checkbox"/>	Transmission Operator	Ensures the real-time operating reliability of the transmission assets within a Transmission Operator Area.
<input type="checkbox"/>	Distribution Provider	Delivers electrical energy to the End-use customer.
<input checked="" type="checkbox"/>	Generator Owner	Owns and maintains generating facilities.
<input type="checkbox"/>	Generator Operator	Operates generation unit(s) to provide real and reactive power.
<input type="checkbox"/>	Purchasing-Selling Entity	Purchases or sells energy, capacity, and necessary reliability-related services as required.
<input type="checkbox"/>	Market Operator	Interface point for reliability functions with commercial functions.
<input checked="" type="checkbox"/>	Load-Serving Entity	Secures energy and transmission service (and related reliability-related services) to serve the End-use Customer.

Standards Authorization Request Form

Reliability and Market Interface Principles

Applicable Reliability Principles <i>(Check box for all that apply.)</i>	
<input checked="" type="checkbox"/>	1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
<input type="checkbox"/>	2. The frequency and voltage of interconnected bulk electric systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
<input checked="" type="checkbox"/>	3. Information necessary for the planning and operation of interconnected bulk electric systems shall be made available to those entities responsible for planning and operating the systems reliably.
<input type="checkbox"/>	4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented.
<input type="checkbox"/>	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems.
<input type="checkbox"/>	6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified, and have the responsibility and authority to implement actions.
<input checked="" type="checkbox"/>	7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis.
Does the proposed Standard comply with all of the following Market Interface Principles? <i>(Select 'yes' or 'no' from the drop-down box.)</i>	
1. The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes	
2. An Organization Standard shall not give any market participant an unfair competitive advantage. Yes	
3. An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes	
4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes	
5. An Organization 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. Yes	

Detailed Description (Provide enough detail so that an independent entity familiar with the industry could draft a standard based on this description.)

This SAR expands on the work already underway with the Assess Transmission Future Needs and Develop Transmission Plans Standard Drafting Team, by requiring that TPL-001 through TPL-006 be upgraded in accordance with the Reliability Standards Development Plan 2007 – 2009. These revisions include the following:

This SAR will be appended to the already approved SAR for Assess Transmission Future Needs and Develop Transmission Plans and will include modifications to all of the following standards:

- TPL-001 — System Performance under Normal Conditions
- TPL-002 — System Performance Following Loss of a Single BES Element
- TPL-003 — System Performance Following Loss of Two or More BES Elements
- TPL-004 — System Performance Following Extreme BES Events
- TPL-005 — Regional and Interregional Self-Assessment Reliability Reports
- TPL-006 — Data from the Regional Reliability Organization Needed to Assess Reliability

The revisions would improve technical clarity and address concerns identified by stakeholders and FERC. The drafting team will focus on the general improvements to the standards and use as a starting point for the expanded work the subject matter identified in *Appendix A: Reliability Standard Review Guidelines* and the FERC and stakeholder concerns identified in *Appendix B: TPL-001 through TPL-006 Technical Issues List*.

The expanded scope also will include elimination of the ‘fill-in-the-blank’ elements of TPL-005 and TPL-006, which require regional and inter-regional assessments based on the system performance requirements stated in TPL-001 through TPL-004. The standards need to be modified or retired to address the “fill-in-the blank” components. If the ‘fill-in-the-blank’ requirements are addressed through the contractual arrangements each Region has with the ERO, TPL-005 and TPL-006 could be retired.

The drafting team must ensure that there is consistency in the requirements across the set of TPL standards

The overall development may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable and technically sufficient bulk power system reliability standards, using the attached, Reliability Standard Review Guidelines. In addition, the drafting team will need to make conforming changes to standards impacted by changes made to these six standards.

Related Standards

Standard No.	Explanation

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Related SARs

SAR ID	Explanation

Regional Differences

Region	Explanation
ERCOT	
FRCC	
MRO	
NPCC	
SERC	
RFC	
SPP	
WECC	

Appendix A: Reliability Standard Review Guidelines

Applicability

Does this reliability standard clearly identify the functional classes of entities responsible for complying with the reliability standard, with any specific additions or exceptions noted? Where multiple functional classes are identified is there a clear line of responsibility for each requirement identifying the functional class and entity to be held accountable for compliance? Does the requirement allow overlapping responsibilities between Registered Entities possibly creating confusion for who is ultimately accountable for compliance?

Does this reliability standard identify the geographic applicability of the standard, such as the entire North American bulk power system, an interconnection, or within a regional entity area? If no geographic limitations are identified, the default is that the standard applies throughout North America.

Does this reliability standard 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 or some other criteria? If no functional entity limitations are identified, the default is that the standard applies to all identified functional entities.

Purpose

Does this reliability standard have a clear statement of purpose that describes how the standard contributes to the reliability of the bulk power system? Each purpose statement should include a value statement.

Performance Requirements

Does this reliability standard 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?

Does each requirement identify who shall do what under what conditions and to what outcome?

Measurability

Is each performance requirement stated so as to be objectively measurable by a third party with knowledge or expertise in the area addressed by that requirement?

Does each performance requirement have one or more associated measures used to objectively evaluate compliance with the requirement?

If performance results can be practically measured quantitatively, are metrics provided within the requirement to indicate satisfactory performance?

Technical Basis in Engineering and Operations

Is this reliability standard based upon sound engineering and operating judgment, analysis, or experience, as determined by expert practitioners in that particular field?

Completeness

Is this reliability standard complete and self-contained? Does the standard depend on external information to determine the required level of performance?

Consequences for Noncompliance

Reliability Standard Review Guidelines

In combination with guidelines for penalties and sanctions, as well as other ERO and regional entity compliance documents, are the consequences of violating a standard clearly known to the responsible entities?

Clear Language

Is the reliability standard stated using clear and unambiguous language? Can responsible entities, using reasonable judgment and in keeping with good utility practices, arrive at a consistent interpretation of the required performance?

Practicality

Does this reliability standard establish requirements that can be practically implemented by the assigned responsible entities within the specified effective date and thereafter?

Capability Requirements versus Performance Requirements

In general, requirements for entities to have ‘capabilities’ (this would include facilities for communication, agreements with other entities, etc.), should be located in the standards for certification. The certification requirements should indicate that entities have a responsibility to ‘maintain’ their capabilities.

Consistent Terminology

To the extent possible, does this reliability standard use a set of standard terms and definitions that are approved through the NERC reliability standards development process?

If the standard uses terms that are included in the NERC Glossary of Terms Used in Reliability Standards, then the term must be capitalized when it is used in the standard. New terms should not be added unless they have a ‘unique’ definition when used in a NERC reliability standard. Common terms that could be found in a college dictionary should not be defined and added to the NERC Glossary.

Are the verbs on the ‘verb list’ from the DT Guidelines? If not – do new verbs need to be added to the guidelines or could you use one of the verbs from the verb list?

Violation Risk Factors (Risk Factor)

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

This is 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.

Time Horizon

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

- **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.

Violation Severity Levels

The drafting team should indicate a set of violation severity levels that can be applied for the requirements within a standard. ('Violation severity levels' replaces the existing 'levels of non-compliance.')

The violation severity levels may be applied for each requirement and may be combined to cover multiple requirements, as long as it is clear which requirements are included and that all requirements are included.

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

- **Lower: 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% to 99% compliant.
- **Moderate: 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% to 94% compliant.

Reliability Standard Review Guidelines

- **High: 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% to 84% compliant.
- **Severe: poor performance or results** — the responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

Compliance Monitor

Replace, ‘Regional Reliability Organization’ with ‘Regional Entity

Fill-in-the-blank Requirements

Do not include any ‘fill-in-the-blank’ requirements. These are requirements that assign one entity responsibility for developing some performance measures without requiring that the performance measures be included in the body of a standard – then require another entity to comply with those requirements.

Every reliability objective can be met, at least at a threshold level, by a North American standard. If we need regions to develop regional standards, such as in under-frequency load shedding, we can always write a uniform North American standard for the applicable functional entities as a means of encouraging development of the regional standards.

Requirements for Regional Reliability Organization

Do not write any requirements for the Regional Reliability Organization. Any requirements currently assigned to the RRO should be re-assigned to the applicable functional entity.

Effective Dates

Must be 1st day of 1st quarter after entities are expected to be compliant – must include time to file with regulatory authorities and provide notice to responsible entities of the obligation to comply. If the standard is to be actively monitored, time for the Compliance Monitoring and Enforcement Program to develop reporting instructions and modify the Compliance Data Management System(s) both at NERC and Regional Entities must be provided in the implementation plan.

Associated Documents

If there are standards that are referenced within a standard, list the full name and number of the standard under the section called, ‘Associated Documents’.

Appendix B: TPL-001 through TPL-006 Technical Issues List

Excerpted from NERC Reliability Standards Development Plan: 2007 - 2009

TPL-001

FERC NOPR

- Require that critical system conditions be determined by conducting sensitivity studies; (*Not necessarily "cook book" but what are the processes someone reasonably skilled in the art would follow.*)
- Require that system conditions and contingencies assessed be reviewed by neighboring systems; (*Looking for coordination with neighboring systems*)
- Modify Requirement R1.3 to substitute the reference to regional reliability organization with Regional Entity;
- Require consideration of planned outages of critical equipment; and
- Modify footnote (a): footnote (a) to Table 1 requires clarification. The NERC Transmission Issues Subcommittee (TIS) 325 recommended that footnote (a) be modified to state explicitly that emergency ratings apply to Category B and C (contingency conditions) and not to Category A (system intact). The Commission proposes that footnote (a) be modified in the revised Reliability Standard as recommended by TIS and that the normal facility rating be in accordance with Reliability Standard FAC-008-1 and normal voltages be in accordance with Reliability Standard VAR-001-1.

FERC Staff Report

- Only for normal
- Doesn't consider planned outages
- Clarify footnote 'a' & 'b' in table
- Stress system during simulations
- Include sensitivity studies
- Include extreme events

Version 0 Industry Comments

- Several semantic issues
- Clarify timing for submittal of corrective plan
- Clarify use of applicable ratings in Table 1, note 'a'
- Need to address deliverability to load
- Define critical system conditions
- Allow for engineering judgment in setting conditions for power flow
- Do planned facilities include just those under construction?
- Need to include multiple time frames
- What is a major load center?
- Table 1 – C.5 goes beyond double circuit outage criteria
- Table 1, items 6, 7, 8 & 9 need footnote stating that they do not apply to generator breaker failure
- Table 1, note 'b' – clarify when to curtail firm deliveries

TPL-001 through TPL-006 Technical Issues List

Phase III/IV Comments

- Add a requirement to verify that there are sufficient reactive resources
- Add a requirement to identify where UVLS should be installed

Violation Risk Factors (VRF) Drafting Team Comment

- R1 – time horizon should be long-term planning

Comment from Draft SAR on Planning Authority

- Provide clarity where the Planning Authority is mentioned

TPL-002:

FERC NOPR

- Require that critical system conditions be determined in the same manner as we propose to require for TPL-001-0;
- Require the inclusion of the reliability impact of the entities' existing spare equipment strategy; (*Only looking for consideration of spare equipment that has a long lead time such as a transformer*)
- Explicitly require all generators to ride through the same set of Category B and C contingencies as required for wind generators in Order No. 661; (*Document explicit definition of ride through capability for generators*)
- Require documentation of load models used in system studies and supporting rationale for their use;
- Clarify the phrase "permit operating steps necessary to maintain system control;" and
- Clarify footnote (b): modify footnote (b) to state that load shedding for a single contingency is not permitted except in very special circumstances where such interruption is limited to the firm load associated with the failure (consequential load loss).³³⁰ For purposes of clarity, the Commission proposes to require that the phrase "to prepare for the next contingency, system adjustments are permitted, including curtailments of contracted Firm (non-recallable reserved) electric power transfers" be deleted from footnote (b). This statement is more appropriate for Category C events and is already captured by footnote (c) to Table 1, which is applicable to Category C events.

FERC staff report

- Only includes loss of single element
- NERC TIS Report recommendations not addressed

Version 0 Industry Comments

- Define critical system conditions
- Clarify timing for corrective plan
- Address deliverability of generation to load
- Clarify applicable ratings in Table 1, note 'a'
- Don't include generation runback or re-dispatch
- Must study all contingencies and multiple demand levels & time frames
- Don't include planning outage
- Single terminals are not included

Phase III/IV comments

- Add a requirement to verify that there are sufficient reactive resources
- Add a requirement to identify where UVLS should be installed

VRF comments

- Time horizon should be long-term planning and R2.2 – redundant with R1.3.8

Comment from draft SAR on Planning Authority

- Provide clarity where the Planning Authority is mentioned

TPL-001 through TPL-006 Technical Issues List

TPL-003:

FERC NOPR

- Require that critical system conditions be determined by conducting sensitivity studies (as elaborated in our discussion of TPL-001-0);
- Clarify footnote c: modify footnote (c) to provide specificity regarding the use of the term “controlled interruption” of load.
- Require the applicable entities to define and document the proxies necessary to simulate cascading outages; and
- Tailor the purpose statement to reflect the specific goal of the Reliability, as discussed above.

FERC Staff Report

- Same as TPL-001 & 002

Version 0 Industry Comments

- Same as TPL-001 & 002
- TO should provide plan of action
- Don't base penalties on low probability, low consequence events
- Use NERC Compliance Reporting Process
- Clearly identify outages

Phase III/IV Comments

- Add a requirement to verify that there are sufficient reactive resources
- Add a requirement to identify where UVLS should be installed

VRF Comment

- Time horizon should be long-term planning
- R2 – lack of consistency with TPL-001 & TPL-002
- R2.1 - lack of consistency with TPL-001
- R2.1.1 - lack of consistency with TPL-001 & TPL-004
- R2.1.2 - lack of consistency with TPL-001 & TPL-005
- R2.1.3 - lack of consistency with TPL-001 & TPL-006
- R2.2 - lack of consistency with TPL-001 & TPL-007

Comment from Draft SAR on Planning Authority

- Provide clarity where the Planning Authority is mentioned

TPL-001 through TPL-006 Technical Issues List

TPL-004:

FERC NOPR

- Require that critical system conditions be determined in the same manner as proposed for TPL-001-0;
- Require the identification of options for reducing the probability or impacts of extreme events that cause cascading;
- Require that, in determining the range of extreme events to be assessed, the contingency list of Category D be expanded to include recent events; and
- Tailor the purpose statement to reflect the specific goal of the Reliability Standard.

FERC Staff Report

- Need to reduce the probability of loss of multiple elements and mitigating impact
- Share assessments
- Need to be more severe than weather
- Same as TPL-001

Version 0 Industry Comments

- Same as TPL-001
- Perform analysis on credible contingency
- R1.3.9 – remove from extreme events
- TO should determine which events to study

Phase III/IV Comments

- Add a requirement to verify that there are sufficient reactive resources
- Add a requirement to identify where UVLS should be installed

Comment from Draft SAR on Planning Authority

- Provide clarity where the Planning Authority is mentioned

TPL-005:

FERC NOPR

- Commission will not propose any action on TPL-005-0, as it applies only to regional reliability organizations.
- The term and extent of assessment, as well as the study years, are not appropriately defined; the process for determining load levels needs to be standardized; and local area networks and system adjustments need to be specifically defined.

Regional Fill-in-the-Blank Team Comments

- New SAR needed

Version 0 Industry Comments

- Define fuel adequacy
- An RRO can't make a mandatory request for another RRO to perform a study

TPL-001 through TPL-006 Technical Issues List

TPL-006:

FERC NOPR

- Commission will not propose any action on TPL-006-0, as it applies only to regional reliability organizations.

**Excerpts from FERC Order 693
TPL Standards**

TPL-001-0

1770. Accordingly, the Commission approves Reliability Standard TPL-001-0 as mandatory and enforceable. In addition, the Commission directs the ERO to develop a modification to TPL-001-0 through the Reliability Standards development process that:

- (1) requires that critical system conditions and study years be determined by conducting sensitivity studies with due consideration of the range of factors outlined above;
- (2) requires a peer review of planning assessments with neighboring entities;
- (3) modifies Requirement R1.3 to substitute the reference to regional reliability organization with Regional Entity;
- (4) requires assessments of outages of critical long lead time equipment, consistent with the entity's spare equipment strategy and
- (5) address the concerns regarding footnote (a) of Table 1, including the applicability of emergency ratings and consistency of normal ratings and voltages with values obtained from other Reliability Standards and the concerns raised by International Transmission in regard to the footnotes in Table 1.

TPL-002-0

1797. Accordingly, the Commission approves Reliability Standard TPL-002-0 as mandatory and enforceable. In addition, the Commission directs the ERO to develop a modification to TPL-002-0 through the Reliability Standards development process that:

- (1) requires that critical system conditions be determined in the same manner as we propose to require for TPL-001-0;
- (2) requires assessments of planned outages of long lead time critical equipment consistent with the entity's spare equipment strategy;
- (3) requires all generators to ride through the same set of Category B and C contingencies as required by wind generators in Order No. 661, or to simulate those generators that cannot ride through as tripping;
- (4) requires documentation of load models used in system studies and supporting rationale for their use;
- (5) clarifies the phrase "permit operating steps necessary to maintain system control" in footnote (a) and the use of emergency ratings and
- (6) clarifies footnote (b) in regard to load loss following a single contingency, specifying the amount and duration of consequential load loss and system adjustments permitted after the first contingency to return the system to a normal operating state, as discussed above.

TPL-003-0

1825. Accordingly, the Commission approves Reliability Standard TPL-003-0 as mandatory and enforceable. In addition, the Commission directs the ERO to develop a modification to TPL-003-0 through the Reliability Standards development process that:

- (1) requires that critical system conditions be determined in the same manner as we propose to require for TPL-001-0;
- (2) modifies footnote (c) to Table 1 to clarify the term “controlled load interruption;”
- (3) requires applicable entities to define and document the proxies necessary to simulate cascading outages and
- (4) tailors the purpose statement to reflect the specific goal of the Reliability Standard.

TPL-004-0

1836. Accordingly, the Commission approves Reliability Standard TPL-004-0 as mandatory and enforceable. In addition, the Commission directs the ERO to develop a modification to TPL-004-0 through the Reliability Standards development process that:

- (1) requires that critical system conditions be determined in the same manner as proposed for TPL-001-0;
- (2) requires the identification of options for reducing the probability or impacts of extreme events that cause cascading;
- (3) requires that, in determining the range of extreme events to be assessed, the contingency list of Category D be expanded to include recent events and
- (4) tailors the purpose statement to reflect the specific goal of the Reliability Standard.

TPL-005-0

1840. Consistent with our discussion in the Common Issues section above, we will not approve or remand TPL-005-0 until we receive additional information from the ERO.

1841. In Order No. 890, the Commission stated that there will be a series of technical conferences and regional meetings to obtain industry input to achieving the goal of regional planning. The Commission encourages the ERO to monitor those proceedings and use the results as input to the Reliability Standards development process in revising Reliability Standard TPL-005-0 to address regional planning and related processes.

TPL-006-0

1845. Consistent with our discussion in the Common Issues section above, the Commission will not approve or remand TPL-006-0.