NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Unofficial Comment Form for Fourth Draft of TPL-001-1 (Project 2006-02)

Please **DO NOT** use this form to submit comments. Please use the electronic form located at the link below to submit comments on the fourth draft of the TPL-001-1 standard for Assess Transmission Future Needs (Project 2006-02) by **October 16, 2009.**

If you have questions please contact Ed Dobrowolski at ed.dobrowolski@nerc.net or by telephone at 609-947-3673.

http://www.nerc.com/filez/standards/Assess-Transmission-Future-Needs.html

Background Information

TPL-001-1 Transmission System Planning Performance Requirements

Comments on the third draft of the TPL-001-1 Transmission System Planning Performance Requirements standard were received from the industry through July 9, 2009. The Drafting Team sought and received feedback to 11 questions, and the team appreciates the tremendous industry participation that generated over 400 pages of comments from over 85 organizations. Below is a brief overview of the 4th draft of the standard highlighting areas where the SDT made changes based on stakeholder feedback from the third posting. The team's objectives remain unchanged - to create a single Transmission planning standard: 1) with clear, concise requirements set at an appropriate level to ensure reliability, and 2) that fully addresses all issues raised by FERC Orders 693 and 890, and industry inputs, including the SAR scope document.

Fourth Draft Overview:

1. At first glance the fourth draft of the standard may appear to have been substantially changed; however, this is not the case as the SDT has maintained its vision throughout the process and the changes shown are primarily clarifying in nature.
2. The flow and organization of the standard remain similar to the 3rd draft. Requirement labeling has been modified in accordance with NERC's revised standards process to eliminate sub-requirements and re-label them as "parts."
3. However, some changes are noteworthy:
    a. Several definitions were revised or deleted based on industry feedback.
    b. Requirement R1 has been revised to clarify the SDT's intent with regard to modeling issues.
    c. Requirement R2, part 2.1.3 has been added to clarify that studies must be performed with known outages included in the base case.
    d. Requirement R2, part 2.1.5 has been revised to clarify the spare equipment strategy and limit the analysis to P0, P1 and P2 categories
    e. How sensitivity studies fit into the overall assessment has been clarified in Requirement R2, part 2.4.3.
    f. Requirement R2, part 2.5 has been added to require stability analysis for proposed generation additions or changes in the Long Term Transmission Planning Horizon.

g. Requirement R2, part 2.6.2 has been revised to decrease unnecessary documentation requirements and the examples of 'material generation changes' have been deleted.

h. Requirement R2, part 2.7.2 has been added to clarify necessary actions with regard to sensitivity studies.

i. Requirement R2, parts 2.7.3 and 2.7.4 have been deleted so inclusion of project initiation dates and in service dates are no longer required.

j. Requirement R2, part 2.10 has been deleted so the maximum permissible Non-Consequential Load Loss does not have to be reported.

k. Requirement R3, parts 3.3.2, 3.3.3 and 3.3.4 have been revised to clarify the requirements for contingency analysis.

l. Requirement R3, part 3.4.1 and Requirement R4, part 4.4.1 have been added to ensure that planners are coordinating with adjacent planners.

m. Requirement R3, part 3.6 has been added to require documentation of generation runback or tripping used to meet performance requirements.

n. Requirements R4, parts 4.1.1 through 4.1.3 have been added as requirements text to replace previous footnote 1 in Table 1.

o. Requirement R4, part 4.3.1 was revised to include the impacts of high speed reclosing.

p. Requirement R4, part 4.3.3 was added to ensure that the impacts of transient swings are simulated.

q. Requirement R5 was added so that appropriate criteria are set.

r. Requirement R8, part 8.1 was added to clarify actions for responding to comments on results of Planning Assessments.

s. All VSLs have been modified to match the new requirement language.

t. Miscellaneous clarifications to existing requirements and Table 1 footnote language.

4. The Implementation Plan has been revised to provide more time for entities to become compliant with P1-2 and P1-3 events with regard to local Load issues.

To facilitate the ability of industry respondents to comment in an orderly fashion and to ease the coordination burden on the SDT in responding to comments, the SDT is asking an all encompassing question for each requirement. This question solicits comments on the requirement text, VRF, Time Horizon, measure associated with the requirement, data retention associated with the requirement, and the VSL associated with the requirement. Please note the numbering below refers to the clean copy of the fourth posting.

1. Requirement R1 – Please provide any specific comments on the requirement text, VRF, Time Horizon, measure associated with the requirement, data retention associated with the requirement, and/or the VSL associated with the requirement.

   Comments: We propose the following changes and questions:

   R1 – Is "within their respective areas" include 'metering buses' (within BA) even though it is outside the 'geographic' footprint of the TP or PC?

   R1.1.2 - Do overlapping or sequential (back-to-back) outages have to be modeled together or separately in one or more system base cases?

   R1.1.3 – Add the qualification of "**for the years defined in R2**".

   R1.1.6 - Are fictional generators allowed when they are needed to make future cases solve?

2. Requirement R2 – Please provide any specific comments on the requirement text, VRF, Time Horizon, measure associated with the requirement, data retention associated with the requirement, and/or the VSL associated with the requirement.

   Comments: We propose the following changes and following questions:

   R2.1.3 - This requirement appears to be redundant of R1.1.2 and we suggest that it be removed. Does this imply that P1 events only need to be performed for the known outage base cases, rather than P2 through P7 events?

   R2.1.4 – What does 'credible' mean'? Would the PA and TP interpretations be valid or would an auditor's interpretation overrule their interpretations? Does more than 5 percent chance of occurrence constitute credible likelihood? What does 'measurable change mean? Would the PA and TP interpretations be valid or would an auditor's interpretation overrule their interpretations? Does a few percent change in voltage levels or thermal loading constitute a 'measurable change'. It should be clear that sensitivity findings doe not obligate the PA or TP to establish Corrective Action Plans to address needs identified in the sensitivity cases.

   R2.1.4 bullet items – Expected transfers and other generation dispatch scenarios should be in the same bullet item, not different bullets. We accept the general concept of planned outages, but think that the terminology of "known" transmission outages should be used to be consistent with R1.1.2.

   R2.1.5 – What does 'major Transmission' mean? Does it include non-BES transmission equipment? We suggest using the more well defined adjective of '**BES**', rather than 'major Transmission '.

   R2.3 [Proposed "R2.3.1"] – We propose the addition of a R2.3.1 requirement, "**Perform an analysis for at least one year in the Near Term Transmission Planning Horizon.**" This addition would clarify that an analysis for only one or more years (e.g. 1, 2, 3, 4, or 5; not all five years) may performed annually to develop an assessment for the near-tern horizon.

   R2.4.1 - What does "study area" mean? Would the PA and TP interpretations be valid or would an auditor's interpretation overrule their interpretations? Do the PA and TP have to prove that dynamic load details were model for a sufficiently large study area around the location of interest to assure valid results? What does "represents" mean? Do the PA and TP have to prove that the aggregate Load model adequately represents the overall dynamic behavior of the Load?

R2.7 - Does there need to be a margin for initiating corrective action that is below the reported interrupting capability of interrupting devices to avoid unforeseen problems and to assure that there is no non-compliance when a project is delayed?

R2.9 – We propose that this requirement be removed because it is not a reliability need and is unnecessary. There is no reliability need to annually state the largest expected Consequential Load Loss due to a P1 or P2 event.

[New "R2.10"] - We propose the addition of a R2.10 requirement, "The Planning Assessment shall identify the applicable steady state and stability limits (such as Facility Ratings and voltage limits) as established by the Region Entity, Planning Coordinator or Transmission Planner, whichever is more restrictive." We proposed the addition of this requirement to Draft 3 to replace Note "a" under "Steady State Only" and Note "b" under "Stability Only" at the beginning of Table 1 because the obligation to identify and observe applicable steady state voltage and post-Contingency voltage deviations is a Requirement (e.g. note usage of the verb "shall"), rather than a performance note.

3. Requirement R3 – Please provide any specific comments on the requirement text, VRF, Time Horizon, measure associated with the requirement, data retention associated with the requirement, and/or the VSL associated with the requirement.

   Comments: We propose the following changes and questions:

   R3.3.1 – What does "controls" mean? Would the PA and TP interpretations be valid or would an auditor's interpretation overrule their interpretations? We suggest that a definition be developed for 'Controls' and that it be added to the NERC glossary of terms.

   R3.3.1 – Revise the wording to add, ". . . **including the simulation of transmission circuit loadability protection**." [The reference to relay loadability type of protection should be included here, rather than R3.3.3. R3.3.3 is redundant and should be eliminated.]

   R.3.3.2 - Does this requirement apply to all generators (e.g. units referred to in R5.6.1, very small units, connected to distribution)? We suggest the addition of a requirement in this standard, or else where that requires Generator Owners to provide there minimum voltage limit, so that TP and PC can fulfill this requirement. Why is the wording of this requirement slightly different from its counterpart, R4.3.2?

   R3.3.3 – Remove this requirement, if the revised wording proposed for R3.3.1 above is accepted.

   [New "R3.3.5"] - We propose the addition of a R3.3.5 requirement, "Planned System adjustments such as Transmission configuration changes and redispatch of generation are allowed if such adjustments are executable within the time duration of the Facility Ratings." R3.3.5 should be added to replace Note "e" under "Steady State & Stability section of Table 1 because the qualification of allowable planned System adjustments is a Requirement, rather than a performance note.

   R3.5 - We note that this requirement calls for the added work of evaluating possible actions. What rewording of this requirement would clarify that you do not have to build a solution (i.e. have a Corrective Action Plan)? (refer to R4.5).

4. Requirement R4 – Please provide any specific comments on the requirement text, VRF, Time Horizon, measure associated with the requirement, data retention associated with the requirement, and/or the VSL associated with the requirement.

   Comments: We propose the following changes and pose the following questions:

   R.4.3.2 - Does this requirement apply to all generators (e.g. units referred to in R5.6.1, very small units, connected to distribution)? We suggest the addition of a requirement in this standard, or else where that requires Generator Owners to provide there minimum voltage limit, so that TP and PC can

fulfill this requirement. Why is the wording of this requirement slightly different from its counterpart, R3.3.2?

[New "R4.3.5"] - We propose the addition of a R4.3.5 requirement, "Planned System adjustments such as Transmission configuration changes and redispatch of generation are allowed if such adjustments are executable within the time duration of the Facility Ratings." R3.3.5 should be added to replace Note "e" under "Steady State & Stability section of Table 1 because the qualification of allowable planned System adjustments is a Requirement, rather than a performance note.

5. Requirement R5 – Please provide any specific comments on the requirement text, VRF, Time Horizon, measure associated with the requirement, data retention associated with the requirement, and/or the VSL associated with the requirement. (Note – This is a new requirement.)

   Comments: None

6. Requirement R6 – Please provide any specific comments on the requirement text, VRF, Time Horizon, measure associated with the requirement, data retention associated with the requirement, and/or the VSL associated with the requirement.

   Comments: None

7. Requirement R7 – Please provide any specific comments on the requirement text, VRF, Time Horizon, measure associated with the requirement, data retention associated with the requirement, and/or the VSL associated with the requirement.

   Comments: None

8. Requirement R8 – Please provide any specific comments on the requirement text, VRF, Time Horizon, measure associated with the requirement, data retention associated with the requirement, and/or the VSL associated with the requirement.

   Comments: None

The SDT is posing several other questions for industry consideration to supplement the specific requirement questions above.

9. The SDT has revised the definitions in response to industry comments to the third posting. Do you agree with these definition changes? If not, please clearly indicate which definition you disagree with and provide specific comments.

   ☐ Yes

   ☒ No

   Comments: We suggest the following changes:

   Add a Consequential Generation Loss definition, which would be a complement to the Consequential Load Loss definition. Both consequential load loss and consequential generation loss are referred to in note "b" of the Steady State & Stability section of Table 1, but only consequential load loss is defined. We suggest text of: "**Consequential Generation Loss: All Generation that is no longer delivered to any Transmission Facilities as a result of the Transmission Facilities removal from service by the operation of the installed Protection Systems designed to isolate fault conditions or otherwise protect the Transmission Facilities from abnormal operating conditions.**"

Revise the Consequential Load Loss definition to include protection for abnormal operating conditions. We suggest text of: "Consequential Load Loss: All Load that is no longer served by any Transmission Facilities as a result of the Transmission Facilities **removal** from service by the **operation of the installed Protection Systems designed to isolate fault conditions or otherwise protect the Transmission Facilities from abnormal operating conditions.**"

Revise the Planning Assessment definition to more explicitly apply to the BES and the TPL-001 requirements. We suggest text of: "Planning Assessment: Documented evaluation of future Transmission System performance and Corrective Action Plans to remedy identified deficiencies **in the BES from the steady state and stability performance requirements set forth in the TPL-001 standard.**"

10. Do you agree with the changes in the performance elements and notes in Table 1? If not, please provide specific comments by note number, note alpha character, or performance category.

☐ Yes

☒ No

Comments: We suggest the following changes:

It would be easier for the reader if the Table 1 appeared right after the requirements instead of following the VSLs.

Remove performance note "e" in the Planning Events, Steady State & Stability section and replace it with proposed R3.3.5 and R4.3.5, as suggested in the comments for R3 and R4. The permission to allow specific system adjustments under specific circumstances seem to a requirement, rather than a performance note.

Remove performance note "a" in the Planning Events, Steady State Only section, and replace it with a proposed R2.10, as suggested in the comments for R2. The obligation to identify and observe applicable steady state voltage and post-Contingency voltage deviations is a Requirement (e.g. note usage of the verb "shall"), rather than a performance note. Otherwise, remove the verb, "shall".

Remove performance note "b" in the both the Steady State and Stability Only sections of the Planning Events and replace it with a proposed R2.10, as suggested in the comment for R2. The obligation to identify and observe applicable transient voltage response limits should be a Requirement (e.g. note usage of the verb "shall"), rather a performance note. Otherwise, remove the verb, "shall".

Add the phrase, "as required in R4.1" to note "a" in the Stability Only section of the Planning Events. This phase highlights that this note reminds the reader of the existing R4.1 in the body of the standard (e.g. usage of the verb, "shall").

Modify the P3 Category performance criteria to apply only to the loss of two generators because the probability of the loss of two base load generators is an order of magnitude greater than the loss of a generator and any other transmission element. We suggest the listing of: the loss of transmission circuit, transformer, shunt device, and single pole of DC line be removed from the P3 Events column. Move the "generator + another element" events to the P6 Category by adding "**1. Generator"** to the listing in the Initial System Condition (Loss of . . .) column.

In Table 1, the Section titled "Steady State & Stability Performance Extreme Events", subsection "Steady State", clarify the meaning of the loss of multiple circuits in Item 2.a by using wording similar to P7. We suggest this text: "a. Loss **of three** or more circuits **that share a common tower.**"

In Table 1, the Section titled "Steady State & Stability Performance Extreme Events", subsection "Steady State", clarify the reference to actual, historical operating experience in Item 3.b. We suggest

this text: “b. Other events based upon **actual** operating experience that may result in wide area disturbances.”

In Table 1, the Section titled “Steady State & Stability Performance Extreme Events”, subsection “Stability State”, clarify the reference to actual, historical operating experience in Item 2.i. We suggest this text that is similar to Steady State, Item 3.b: “i. Other events based upon **actual** operating experience that may result in wide area disturbances.”

Further clarify the applicable shunt devices in Footnote 6 with this suggested text: “6. Requirements which are applicable to shunt devices, also apply to FACTS devices that are connected to ground**, but not instrument voltage transformers or surge arresters.**”

11. The SDT has provided a revised Implementation Plan as part of this posting. Do you agree with the revisions to the Plan? If not, please provide specific comments.

☐ Yes

☒ No

Comments: We offer the following comments.

This standard does not contain any requirements regarding the implementation of the Corrective Action Plans. So, the wording in this section “Any entity that cannot fully implement . . . “ should be replaced with wording like, “I**f the Corrective Action Plans to eliminate the need . . . can not be implemented within 60 calendar months . . . then the TP and PA should work with the applicable TO(s) and Regional Entities to develop mitigation plans for revised Corrective Action Plans until the implementation issue is resolved**”.

The proposed standard implies that the 24 month time period (for R2-R7) and 60 month time period (for specific allowances for selected event categories) run in parallel rather than sequentially. As currently proposed, the effective date for performing analyses and developing subsequent Corrective Action Plans is 24 months. If the identification of new needs and action plans take 24 months, then only 36 months would be left to implement the new corrective action plans. It may not be feasible to install some BES facilities, especially above 300 kV, in less than 3 years. Some EHV projects can take 5 to 10 years to implement depending on the size, complexity, and controversial nature of the project.

We suggest that the effective date be stated in more “implementation dependent” terms for this ‘one time’ transient period, rather than specific and possibly inappropriate “fixed timeframe” terms. Consider wording such as “tripping of Non-Consequential Load or curtailment of Firm Transmission Service (in accordance with Requirement R2, part 2.7.5) **is allowed until Corrective Action Plans that are based on TPL-001-1 analyses can be implemented**”.

The ‘implementation dependent’ approach may allow the removal of all or part of the text on implementation exceptions and mitigation procedures that do not appear to be suitable in an Effective Date section.

12. Do you believe that this standard is ready to go to ballot? (if ‘No’ is checked here, the SDT will consider that comments raised on the other questions drove that decision.)

☒ Yes

☐ No

Comments: Yes, if the proposed changes and questions are adequately addressed.