

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.

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- 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.

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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:

R1 – The MRO NSRS interprets that “within their respective areas” refers to the geographic footprint of the TP or PC transmission system. The MRO NSRS proposes clarifying that “within their respective area” does not require the inclusion of remote generation or load (metering) buses that are within the declared Balancing Authority area, but may be outside and separate from the TP or PC geographic footprint.

M1 – The MRO NSRS recommends that words be added to M1 to indicate that each responsible entity must provide evidence that “it is maintaining System models **within its respective area**, using the latest...”

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:

Add R2.7.1 Item #7 – The MRO NSRS proposes the addition of the following bullet item to R2.7.1, “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.” because this explains what is allowed to be considered for Corrective Action Plan developments. [After bullet item #7 is added, Note “e” under “Steady State & Stability section of Table 1 should refer to R2.7.1.]

R2.9 – The MRO NSRS still proposes that this requirement be removed because annually stating the single, largest expected, Consequential Load Loss due to a P1 or P2 event in the TP or PC system is not needed to provide reliable BES performance or assure open and transparent Transmission planning peer review. In general, standards should not contain requirements that don’t improve reliability.

R2.4.1 – The MRO NSRS recommends that the SDT clarify section 2.4.1 and when load models considering induction motors are required. The clarification should add limits or thresholds to provide load models based on areas that have stability limits or issues and to loads of substation size and having dynamic characteristic capable of significantly impacting voltage stability. Areas that don’t have large motors or stability issues should not be required to add unnecessary load modeling.

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.

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Comments:

R3.3.1 – Revise the wording to add, “. . . **including the simulation of transmission circuit loadability protection.**” The Protection System actions should be included in this requirement regarding proper Protection System simulation, rather than as a separate requirement in R3.3.3. Otherwise there would be in double jeopardy of violating R3.3.1. and R3.3.3 when circuit loadability protection is not properly simulated.

R3.3.2 – The MRO NSRS suggests that this requirement be removed because it is premature to requirement Transmission Planners to simulate under voltage tripping until the MOD standards require it. If the drafting team does not remove this requirement the MRO NSRS proposes revised wording to qualify which generating units to consider and which voltage limits to simulate, **“Trip generating units that are connected to the BES when actual or assumed minimum generator steady state or ride through voltage limits are known and simulations show voltages may fall below the voltage limit. If assumed voltage limits are used, then they should be included in the assessment”**. The requirement should not apply to all relevant generating units until one of the MOD standards requires all Generator Owners to provide their minimum generating unit voltage limits to the TP and PC. If the wording of R3.3.2 must be different from its counterpart, R4.3.2, then please explain the reasons for any differences.

R3.3.3 – As noted above, The MRO NSRS suggests that R3.3.3 be removed and this System Protection simulation requirement should be included in R3.3.1, which is the requirement to properly simulate Protection System actions.

Add R3.3.5 – The MRO NSRS suggests the addition of R3.3.5, “Applicable System Operating Limits for the planning horizon shall not be exceeded.” because Note “a” and “b” under “Steady State Only” at the beginning of Table 1 are stated in the form of a Requirement (e.g. uses the verb, “shall”) and all Requirements should be explicitly stated under Requirements and not be introduced (and hidden) in the performance notes of Table 1. [After R3.3.5 is added, Note “a” should be revised and refer to R3.3.5.]

Add R3.3.6 – The MRO NSRS suggests the addition of R3.3.6, “The response of voltage sensitive Load including Load that is disconnected from the System by end-user equipment associated with an event shall not be used to steady state voltage requirements.” because Note “d” under “Steady State Only” at the beginning of Table 1 is stated in the form of a Requirement (e.g. uses the verb, “shall”) and all Requirements should be explicitly stated under Requirements and not be introduced (and hidden) in the performance notes of Table 1. [After R3.3.6 is added, Note “d” should be revised to refer to R3.3.6.]

R3.4.1 – The MRO NSRS suggests that the word “coordinate” and the reference to the Transmission Planner be removed and offer the following revised text, “the Planning Coordinator shall provide the list of contingencies that are simulated in the adjacent Planning Coordinator area to the respective Planning Coordinator for review and feedback.”. Standard Drafting Teams are generally instructed not to use the word “coordinate”. The MRO NSRS suggests that this requirement apply to the PC because the PC would share with any affected Transmission Planners.

R3.6 – The MRO NSRS suggests the wording of this requirement be revised to, “Manual or automatic generation runback or tripping is permitted to meet steady state performance requirements for planning events P1 through P7 in Table 1.” because Reliability Standard PRC-015-1 already includes requirements regarding the review and approval of Special Protection Systems. Therefore, the Planning Assessment does not need to duplicate description of the design and intent of the Special Protection System.

M3 & R3 Data Retention - The MRO NSRS proposes that the wording in these elements be revised to change “All” to “The”. The word “All” is unnecessary and could encourage over-the-top compliance monitoring and enforcement. The revised data retention would read as follows: “The studies performed in support....”

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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:

R4.1.1 & R4.1.2 – The MRO NSRS proposes that these sub-requirements be removed. The generating unit loss of synchronism does not necessary result in a thermal, voltage, or stability violations.

R4.1.1 - Wording from R4.1.1 about no generating unit pulling out of synchronism should be deleted. The simple loss of synchronism of a unit or even multiple units does not necessarily result in thermal, voltage, or stability. All standards and requirements should demonstrate a reliability related basis. There is no direct reliability or security requirement that prevents a unit from loosing synchronism. The loss of a unit from synchronism is no different than the regular loss of the unit for mechanical reasons, therefore this requirement unnecessarily results in FERC directing utilities to build infrastructure beyond what is needed for system security.

R4.1.3 – The MRO NSRS proposes that this sub-requirement be removed because there are no NERC power system damping standards.

R.4.3.2 – The MRO NSRS suggests that this requirement be removed because it is premature to requirement Transmission Planners to simulate under voltage tripping until the MOD standards require it. If the drafting team does not remove this requirement the MRO NSRS proposes wording like, **“Trip generating units that are connected to the BES when actual or assumed minimum generator transient voltage limits are known and simulations show voltages may fall below the voltage limit. If assumed voltage limits are used, then they should be included in the assessment”**. The requirement should not apply to all relevant generating units until one of the MOD standards requires all Generator Owners to provide their minimum generating unit voltage limits to the Transmission Planner and Planning Coordinator. If the wording of R4.3.2 must be different from its counterpart, R3.3.2, then please explain the reasons for any differences.

R4.3.3 – Every dynamic event simulation involves power system transient swings. What are the size and scope of the transient swings and what is the scope of the system to be examined, to which this requirement is referring? Please reword this requirement to give the industry a better understanding of what is intended. As written R4.3.3, it might be interpreted to require responsible entities to add the modeling of all relaying instead of just pertinent. Perhaps, R4.3.3 should be limited to transient swings on facilities 345 kV and above so as to limit this part of requirement 4 to those situations that are most likely to result in cascading. If the SDT determines not to add such a limitation, the MRO NSRS proposes that the implementation time for R4 to be increased. The MRO NSRS believes that many responsible entities would need 3 years to add these relaying models to system stability models so that the fourth year additional transmission planning analysis in this respect is conducted. The MRO NSRS urges that the SDT increase the implementation time for R4 from 2 years to 4 years. When it may actually respond or triggered.

R 4.3.1 – This requirement refers to high speed reclosing and the MRO NSRS presumes that this is special high speed reclosing that is completed in several cycles, rather than the normal high speed reclosing that is completed in a number of seconds. The MRO

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NSRS recommends that the term high speed reclosing be defined for this sub-requirement with an angular stability component.

R4.5 - The MRO NSRS believes that the extreme events that should be studied are the more credible ones. The credible events are those that the planner considers credible when considering both how severe the event is and how likely it is. For example, while a tornado might be the most severe event, its likelihood of hitting key facilities is quite low. It is more likely to have a severe thunderstorm that hits key facilities but causes less impact on the system. The planner should plan for the severe thunderstorm but perhaps should not plan for the tornado. The MRO NSRS recommends that 4.5 be revised to indicate that a list of those events that “produce more severe System impacts **and are more likely**” (the bolded words are suggested words to be added) be studied as being more credible events. Then the purpose of the last sentence in 4.5 is clearer in that possible actions that reduce the likelihood or mitigate the consequences of the events shall be reviewed for those contingencies where likelihood in combination with consequences justify such evaluation.

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:

A. The MRO NSRS recommends the data retention for R5 and M5 be revised to change “All” to “The”. The word “All” is unnecessary and could encourage over-the-top compliance monitoring and enforcement. The revised data retention would read as follows: “The documentation specifying the criteria since....”

B. This requirement should not include the criterion, “post-Contingency voltage deviation”, because this criterion is not used widely enough in the industry to be a well established criterion.

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:

The MRO NSRS recommends the data retention for R6 and M6 be revised to change “All” to “The”. The word “All” is unnecessary and could encourage over-the-top compliance monitoring and enforcement. The revised data retention would read as follows: “The studies performed in support....”

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:

The MRO NSRS recommends the data retention for R7 and M7 be revised to delete “All”. The word “All” is unnecessary and could encourage over-the-top compliance monitoring

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and enforcement. The revised data retention would read as follows: "The current, in force agreement on identified responsibilities, as well as such agreements in force..."

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:

The MRO NSRS asks that the SDT revise R8 to limit the need to provide the Planning Assessment as follows "adjacent Planning Coordinators and adjacent Transmission Planners and to any registered functional entity..." This MRO NSRS suggestion is added to the requirement to clarify that the word adjacent also applies to Transmission Planners and to clarify that the functional entity must be registered in order for the entity to be applicable to the requirement.

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:

A. 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. The MRO NSRS suggests 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."

B. The MRO NSRS offers the following comment to one of the proposed definitions of TPL-001. Non-Consequential Load Loss: Non-Interruptible Load loss other than Consequential Load Loss that is the result of the response of voltage sensitive Load including Load that is disconnected from the System by end-user equipment.

C. Add a Planning Horizon definition. This term is used in this proposed standard, in the FAC-010-2 standard, and possibly in other future standards, but it has not been defined yet.

D. The SDT is to be commended for working on the Year one definition, however, concerns exist that if the standard is adopted as written, it is incompatible with the eastern interconnection wide ERAG model process.

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E. If the SDT intends to change the planning processes and model building processes throughout NERC in this regard, then the SDT should explain the benefits of changing this process and verify that it does not sabotage the normal model building and study process.

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:

A. P3 – 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. The MRO NSRS suggests 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.

B. The SDT should be commended for the changes that were made to Table 1. However, the MRO NSRS does recommend a few editorial changes. On page 16 under the Steady State and Stability heading is item d. Simulate Normal Clearing unless otherwise specified. This is also listed as footnote 2 to the table. The MRO NSRS recommends that item d under the Steady State and Stability heading be deleted.

C. Why is there a footnote 1 indicator to note j. under Stability only? The MRO NSRS suggests that this footnote 1 indicator be deleted.

D. Item i. under Steady State only states that “the response of voltage sensitive Load that is disconnected from the System by end-user equipment” is not to be used to meet steady state requirements. However, the non-consequential load loss says yes meaning it is allowed for some events in the table and non-consequential load loss definition includes the “response of voltage sensitive Load that is disconnected from the System by end-user equipment.” This seems to be a direct contradiction. The MRO NSRS suggests that Item i. under steady state only be deleted.

E. The MRO NSRS does not understand why there is a footnote 19 indicator for P3 and P5 – EHV in the table when no footnote 19 exists. Perhaps the SDT meant footnotes 1 and 9 but The MRO NSRS recommends that this be corrected.

F. The MRO NSRS does not understand why there is a footnote 12 indicator for Item 2 a and 2 b. on page 19. Perhaps the SDT meant footnotes 1 and 2 apply but The MRO NSRS recommends that this be corrected.

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:

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A. In the implementation plan, the provision which indicates if an entity doesn't construct in time that entity has to report itself as noncompliant. This is a violation of the energy policy act. Since FERC can't force an entity to built, this provision should be deleted.

B. This standard does not contain any requirements regarding the implementation of the Corrective Action Plans. So, the wording in this section of "Any entity that cannot fully implement . . .", should be replaced with wording like, **"If the Corrective Action Plans to eliminate the need . . . can not be implemented within 60 calendar months . . . then the Transmission Planner and Planning Authority should work with the applicable Transmission Owner (s) and Regional entity(s) to develop mitigation plans for revised Corrective Action Plans until the implementation issue is resolved"**.

C. 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.

D. The MRO NSRS suggests 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"**.

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: **More discussion is needed pertaining to this standard.**