

## Unofficial Comment Form for Informal Comment Period on 5th Draft of Standard TPL-001-2 — Assess Transmission Future Needs (Project 2006-02)

Please **DO NOT** use this form. Please use the [electronic form](#) located at the link below to submit comments on the 5<sup>th</sup> draft of the TPL-001-2 standard for Assess Transmission Future Needs (Project 2006-02). The electronic comment form must be completed by **September 2, 2010. This is a 30-day informal comment period.** That means that for each question asked on this comment form:

- The drafting team will provide a summary response to indicate whether stakeholders who submitted comments support the modification made to the standard following the initial ballot.
- The drafting team will identify any additional modifications made to the standard based on stakeholder comments submitted in response to that question.
- The team will not provide a response to each individual comment submitted.

If you have questions please contact Ed Dobrowolski at [ed.dobrowolski@nerc.net](mailto: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 initial ballot of the TPL-001-1 (now TPL-001-2) Transmission System Planning Performance Requirements standard were received from the industry through March 1, 2010. The Drafting Team received feedback on a number of issues, and the SDT appreciates the tremendous industry participation in the ballot process. Below is a brief overview of the 5<sup>th</sup> draft of the standard highlighting areas where the SDT made changes based on stakeholder feedback from the initial ballot. 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.

#### 5<sup>th</sup> Draft Overview:

1. The Implementation Plan has been revised to provide more time for entities to become compliant.
2. The definition for Year One was changed and an example provided to clarify the intent of the SDT.
3. The following requirements were changed:
  - a. R1 – To provide a reference for normal system conditions.
  - b. R2 – To indicate that 'qualified' past studies can be utilized.
  - c. R2, Part 2.1 – To indicate that 'qualified' past studies can be utilized.
  - d. R2, Part 2.1.4 and Part 2.4.3 – To clarify the sensitivity analysis.
  - e. R2, Part 2.1.5 – Semantic change for clarity.
  - f. R2, Part 2.4.1 – Clarification of what is expected for dynamic load models.

- g. R2, Part 2.5 – Clarification of what is meant by ‘material’.
  - h. R3, Part 3.3.1 & R4, Part 4.3.1 – Semantic re-arrangement of conditions for clarity.
  - i. R3, part 3.5, R4, part 4.4, & R4, part 4.5 – Semantic change for clarity.
4. Header note changes:
- a. Semantic change for clarity in ‘a’.
  - b. Deletion of redundant phrasing in ‘e’.
  - c. Move of ‘j’ to ‘a’.
5. Performance table changes:
- a. Addition of footnote 12 reference in P1, P2-1, and P3.
  - b. Description change in P5 and addition of footnote 13 for relay reference.
6. Extreme event – steady state 2d – Addition of ‘generating’ for clarity.
7. Footnote changes:
- a. #11 – Specific references supplied.
  - b. #12 – Clarification of Non-Consequential Load Loss (pending resolution in Project 2010-11).
  - c. #13 – Relay references supplied.
8. Measurement changes:
- a. M6 – Matching language to requirement.
  - b. M8 – Semantic change for clarity.
9. R8 VSL – Semantic change for clarity and strict adherence to guidelines.

## Unofficial Comment Form for Assess Transmission Future Needs (Project 2006-02)

---

The SDT is interested in tracking comments to the changes made in response to the initial ballot comments and thus has asked only questions that refer solely and directly to those changes.

1. The SDT has revised the Implementation Plan based on industry comments to the initial ballot. Do you support this change? If you do not support this change, please specify why you disagree and include specific alternative language to resolve your concern.

Yes

No

Comments:

2. The SDT has revised the definition of Year One based on industry comments to the initial ballot. Do you support this change? If you do not support this change, please specify why you disagree and include specific alternative language to resolve your concern.

Yes

No

Comments:

3. The SDT has revised the Requirements language based on industry comments to the initial ballot. Do you support these changes? If you do not support these changes, please specify why you disagree and include specific alternative language to resolve your concern.

Requirement R1 – normal conditions:

Yes

No

Comments: We propose the following changes and questions:

R1 – We offer the minor suggestion of replacing the wording of “maintain System models within their respective areas” with “maintain System models of elements that are interconnected to any portion of the BES that is owned or operated by the TP or PC”. This wording would avoid the ambiguity that can occur when a BA that is associated primarily with one TP declares ownership of a bus in another TP’s geographic area, but expects its primary TP to maintain the BA’s model data for the remote generation or load.

R1.1.2 – We request the SDT opinion on how two individual outages should be modeled if they are both in excess of six months duration and they overlap by less than six months. Should the overlapping condition only be modeled if the condition is expected to last more than six months?

■

3.1 Requirement R2 and Part 2.1 – past studies:

Yes

No

Comments:

R2.1.3 – We offer the minor suggestion of revising R2.1.3 to state, “**Known outages of generation or Transmission Facilities with a duration of at least six months be simulated along with P1 events for the System peak or Off-Peak conditions when the outages are scheduled to occur.**” We interpret that the requirement should only call for the simulation of individual outages with duration of six months or more and not imply the simulation of sequential (back-to-back) outages where each individual outage is less than six months, but the composite duration of the back-to-back outages is more than six months. We also interpret that if two or more known outages with duration of at least six months are overlapping, then the overlapping outage condition would only be simulated for the conditions when the overlapping outages are scheduled to occur if the duration of the overlapping condition is at least six months.

R2.1.5 – We offer a major suggestion regarding the phrase “could result in the unavailability of major transmission equipment” because this phrase is ambiguous and not defined. So, there is a significant risk of different and possibly contradictory interpretations by TPs, PCs, and auditors. We proposed adding that the TP and PC “shall provide documentation to support the technical rationale for defining unavailability of major transmission equipment” similar to R2.5. ¶

3.2 Requirement R2, Parts 2.1.4 & 2.4.3 – sensitivity analysis:

Yes

No

Comments:

R2.1.4 & R2.4.3 – We offer a major suggestion regarding the terms of ‘credible’ and ‘measurable change’ because these terms are ambiguous and not defined. So, there is a significant risk of different and possibly contradictory interpretations by TPs, PCs, and auditors. We proposed adding that the TP and PC “shall provide documentation to support the technical rationale for determining the range of credible conditions and measurable change in performance” similar to R2.5.

R2.1.4 & R2.4.3 bullet items – We offer the minor suggestion that the number and description of the bullet items in R2.1.4 match the bullet points in R2.4.3. Otherwise, please explain the reasons for any differences between the bullet items in R2.1.4 and R2.4.3.

R2.1.4 bullet #2 & # 5 – We suggest that the wording in bullet #2 be changed to “Expected transfers **and other generation dispatch scenarios**”. This modification would put the transfer and dispatch element, which are complementary, together in the same bullet item, rather than grouping the ‘generation dispatch’ (operating level) element together with the generation capacity elements in bullet item #5.

R2.1.4 bullet #7 – We offer the minor suggestion that the term “planned” be replaced with “known” to be consistent with R1.1.2 and R2.1.3. Besides the term “planned outage” has a specific meaning in the Reliability Standards that are specific to the Operating horizon.

R2.7.2 – With regard to “include actions to resolve performance deficiencies identified in multiple sensitivity studies”, we do not think that mitigation plans should be required for deficiencies found in multiple sensitivity studies because the conditions in some sensitivity studies are more extreme and less likely than base case conditions. It’s impractical to require corrective actions for longer term horizon sensitivities due to how fast the electric grid changes. We believe sensitivity analyses are valuable to improving the development of mitigation plans to address base case performance limit concerns. Some of the sensitivity study conditions are not credible or plausible enough to warrant the

implementation of mitigation measures. What is the interpretation of multiple sensitivity studies - more than one or a majority of the number that were studied?

3.3 Requirement R2, Part 2.4.1 – dynamic load models:

Yes

No

Comments:

3.4 Requirement R2, Part 2.5 – material clarification:

Yes

No

Comments:

4. The SDT has revised the header notes based on industry comments to the initial ballot. If you do not support these changes, please specify why you disagree and include specific alternative language to resolve your concern.

Yes

No

Comments: We offer the major suggestion that Requirements not be created in the Performance Table and be absent from the Requirement section. Requirements should only be referred to in the Performance Table after they already exist in the Requirement section.

- a. Notes “f” and “g” under “Steady State Only” section in the Table 1 header create requirements (e.g. use the verb, “shall”) that do not appear in the Requirements section. We suggest adding R3.3.5, which could read, “Applicable System Operating Limits for the planning horizon shall not be exceeded.” [After R3.3.5 is added, Notes “f” and “g” should be revised and refer to R3.3.5].
- b. Note “i” under “Steady State Only” section in the Table 1 header creates a requirement (e.g. use the verb, “shall”) that does not appear in the Requirements section. We suggest adding R3.3.6, which could read, “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 meet steady state voltage requirements.” [After R3.3.6 is added, Note “d” should be revised to refer to R3.3.6.
- c. Note “j” under the “Stability Only” section in the Table 1 header creates a requirement (e.g. use the verb, “shall”) that does not appear in the Requirements section. We suggest adding R4.1.4, which could read, “Transient voltage response shall be within acceptable limits established by the Planning Coordinator and the Transmission Planner”. [After R4.1.4 is added, Note “j” should be revised to refer to R4.1.4.]

5. The SDT has revised the performance table (including the list of extreme events and footnotes) based on industry comments to the initial ballot. If you do not support these changes, please specify why you disagree and include specific alternative language to resolve your concern.

Yes

No

Comments:

We offer the major suggestion that the P3 Category performance criteria be modified to apply only to the loss of two generators. The SDT properly recognizes that generator outages are significantly more probable than line or transformer outages and should be "higher" in the category list. However given the clearly higher probability of generator outages, the probability of the loss of two generators is clearly higher than the loss of a generator and line or the loss of a generator and transformer. Therefore, if the loss of two generators is in the P3 category, then the loss of a generator and line or transformer should be clearly "lower" in the category list. We suggest the listing of: the loss of a generator and some other element (e.g. transmission circuit, transformer, shunt device, and single pole of DC line) be moved to a lower event category, such as the P6 Category by adding "**1. Generator**" to the listing in the Initial System Condition (Loss of . . .) column.

Item 2.a in the Extreme Events, Steady State section – 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 structure.**"

Footnote 6 – 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."

6. The SDT has revised the Measures based on industry comments to the initial ballot. If you do not support these changes, please specify why you disagree and include specific alternative language to resolve your concern.

Yes

No

Comments:

7. The SDT has revised the Requirement R8 VSL based on industry comments to the initial ballot. If you do not support these changes, please specify why you disagree and include specific alternative language to resolve your concern.

Yes

No

Comments:

1. How are backup relays handled (TPL-002-0, R1.3.10 & TPL-001-2 R1 & P5)? What does FERC construe as normal system for a protection system. The TPL-001-2 R1 & P5, this standard doesn't appear to address primary protection and how this handled.
2. 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."
3. R2.1.5 – We propose replacing the term 'major Transmission' with "BES" because BES is a well defined term, while the term, 'major Transmission', is not.
4. Add R2.3.1 – We suggest the addition of a R2.3.1 requirement to emulate the distinction between the requirement to perform a short circuit assessment and conduct required studies or analysis to

support the assessment (e.g. R2.1/R2.1.1 and R2.2/R2.2.1). We propose wording such as, "Perform an analysis for at least one year in the Near Term Transmission Planning Horizon." This requirement would set an expectation that an analysis should be conducted to at least one or more years in the near-term planning horizon, rather than imply that an analysis of all five years in the near-term planning horizon must be conducted.

5. R2.7.4 – We suggest that the wording of R2.7.4 be the same as R.2.8.2. Otherwise, we propose that R2.7.4 and R2.8.2 be revised with wording like, ". . . implementation status of identified Corrective Action Plans for System Facilities and Operating Procedures." to clarify that the identified system facilities and operating procedures refer only to those that were in the previous year's Corrective Action Plans.
6. R3.3.1 – The term of 'controls' is ambiguous and not defined, unlike the term, 'Protection Systems', which is defined. Therefore, we suggest that this item be defined or more clearly described to avoid the risk of different and possibly contradictory interpretations by TPs, PCs, and auditors.
7. R3.3.1, bullet #1 - We suggest qualifying which generating units to consider and which voltage limits to simulate with revised wording like, "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 R3.3.1 bullet #1 must be different from its counterpart, R4.3.1 bullet #2, then please explain the reasons for any differences.
8. R3.4.1 – Compliance with the requirement "to coordinate" is problematic and non-measurable. We suggest replacing it with the requirement "to communicate".
9. R3.5 - We interpret that R3.5 requires the TP and PC to conduct an evaluation of possible actions to reduce the likelihood or impact of extreme events, which produce the more severe impacts, if cascading outages may occur. Does the drafting team intend for the TP and PC to fulfill this requirement for at least one event in each of the five categories (i.e. 3 steady state and 2 stability) or in each of the 21 categories/sub-categories (i.e. 14 steady state and 7 stability). Also, if the resulting cascading outages do not result in any overloads, under-voltages, voltage collapse, or loss of generator synchronization, then should the evaluation of possible actions to reduce likelihood or impact be required?
10. R4.1.1 – We suggest that there should be some qualification of which generating units are referred to in this requirement. We propose that the requirement say, "No generating unit connected to the BES shall pull out of synchronism." For example, some utilities include smaller generation units that are connected at voltages below 100 kV and even down to distribution voltage in their base cases.
11. R4.1.2 – We propose that the wording of this requirement be revised to reflect the same BES qualification of the generating unit that we noted in R4.1.1 above.
12. R4.3.1 – This requirement refers to high speed reclosing and we presume 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. We recommend that the term high speed reclosing be more clearly defined for this sub-requirement.
13. R5 – This requirement should remove the criterion item, "post-Contingency voltage deviation", because this criterion is not used widely enough in the industry to be well established criterion.
14. **R8** – This requirement should be revised 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 suggestion is added to the requirement to clarify that the word

**Unofficial Comment Form for Assess Transmission Future Needs (Project 2006-02)**

---

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.