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

**Interpretation of Transmission Planning) Docket Nos. RM06-16-000 and
Reliability Standard) RM10-6-000
)**

**COMMENTS OF THE
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION
FOR INTERPRETATION OF TRANSMISSION PLANNING
RELIABILITY STANDARD**

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May 10, 2010

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I. INTRODUCTION

The North American Electric Reliability Corporation (“NERC”)¹ provides these comments in response to the Federal Energy Regulatory Commission’s (“FERC” or “Commission”) Notice of Proposed Rulemaking (“NOPR”).² In the NOPR, the Commission proposed to reject an interpretation of Requirement R1.3.10 of Reliability Standard TPL-002-0 – System Performance Following Loss of a Single Bulk Electric System Element (Category B) – that was considered and approved through the NERC Reliability Standards Development Process. Instead, the Commission proposed to substitute an alternative interpretation of the Reliability Standard. The Commission’s proposed interpretation is inconsistent with the text of the Reliability Standard, and the Commission’s proposed changes exceed the scope of its Congressionally-granted authority with respect to Reliability Standard development. NERC urges the Commission to approve the interpretation as filed.

As background, NERC developed its proposed interpretation in response to a January 12, 2009, request submitted by PacifiCorp.³ In its NOPR, the Commission proposed to interpret Requirement R1.3.10 of TPL-002-0 to require “that planners study, in their system assessments, the non-operation of primary protection systems in order to ascertain whether and how reliance on the as-designed backup or redundant protection systems affects reliability.”⁴

¹ The Federal Energy Regulatory Commission (“FERC” or “Commission”) certified NERC as the electric reliability organization (“ERO”) in its order issued on July 20, 2006 in Docket No. RR06-1-000. *North American Electric Reliability Corporation*, “Order Certifying North American Electric Reliability Corporation as the Electric Reliability Organization and Ordering Compliance Filing,” 116 FERC ¶ 61,062 (July 20, 2006).

² *Interpretation of Transmission Planning Reliability Standard*, 130 FERC ¶ 61,208 (2010) (“NOPR”).

³ *Petition of the North American Electric Reliability Corporation for Approval of Interpretation to Reliability Standard TPL-002-0 — System Performance Following Loss of a Single Bulk Electric System Element (Category B)*, Docket Nos. RM06-16-000 and RM10-6-000 (November 17, 2009) (“NERC Petition”).

⁴ NOPR at P 15.

An interpretation provides clarity regarding the responsibilities of a registered entity and does not change the meaning or language of the original NERC Reliability Standard and its requirements. At all times, the language of the Reliability Standard governs.

By this filing, NERC submits its response to the NOPR.

II. NOTICES AND COMMUNICATIONS

Notices and communications with respect to this filing may be addressed to:

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III. DISCUSSION

A. The Commission has exceeded the scope of its authority by effectively substituting its judgment and proposing an interpretation that changes the Reliability Standard.

The Commission's alternative proposal improperly expands the conditions that must be studied and addressed under TPL-002-0. Essentially, the Commission's proposed interpretation adds "new requirements" to the Reliability Standard.⁵ Such action is beyond the scope of the Commission's authority under Section 215 of the Federal Power Act ("FPA").

Section 215 of the FPA requires the ERO to develop Reliability Standards under rules that ensure "reasonable notice and opportunity for public comment, due process, openness, and balance of interests." Section 215(d)(2) also requires the Commission to give due weight to the technical expertise of the ERO with respect to the content of a Reliability Standard. Section 215(d)(5) provides that the Commission may order the ERO to submit a proposed Reliability Standard or a modification to a Reliability Standard that addresses a specific matter, if the Commission considers such a new or modified Reliability Standard appropriate to carry out Section 215. There are limits on the Commission's authority, however. The Commission does not have authority to dictate the content or text of a Reliability Standard. Rather, it may either approve a Reliability Standard (or modifications thereto) or remand it to the Reliability Standards Development Process to consider and address any potential issues. While the Commission has authority to approve, reject, or remand interpretations, the Commission is precluded from effectuating changes to a Reliability Standard through an interpretation.

The NERC Reliability Standards Development Process, set forth in Appendix 3A of the NERC Rules of Procedure, allows an entity to seek an interpretation of a Reliability Standard.

⁵ *North American Electric Reliability Corporation*, "Order on Reliability Standard Interpretation," 129 FERC ¶ 61,191 at P 17 (2009).

An interpretation does not represent a new or modified Reliability Standard requirement, but provides instruction with regard to the intent and, in some cases, application of the requirement that will guide compliance with it.

Yet, here, the Commission's proposed action effectively modifies the Reliability Standard itself. As a result, by substituting its own alternative interpretation to that filed by NERC, the Commission is not giving due weight to NERC's technical expertise, which includes the valuable input of industry experts across North America that have operational and planning experience spanning many years. By interpreting the standard, the Commission is preventing NERC from proposing an equally effective alternative to a described problem to be addressed. Thus, the Commission's NOPR would accomplish indirectly that which it is prohibited from doing directly, in contravention of well-established judicial precedent.⁶

B. The Commission's Proposed Interpretation of Requirement R1.3.10 is inconsistent with the purpose and text of Reliability Standard TPL-002 that the Commission previously approved.

The NERC Transmission Planning Standards, TPL-001 through TPL-004, are designed to require periodic system simulations and associated assessments of the prospective performance of portions of the Bulk Power System ("BPS") to ensure that reliable systems are developed that meet specified performance requirements with sufficient lead time, and continue to be modified or upgraded as necessary to meet present and future system needs. These standards cover a broad spectrum of conditions ranging from "No Contingencies" where no BPS elements are lost (TPL-001), to "Single Contingencies" that result in the unplanned loss of a single BPS element (TPL-002), to "Multiple Contingencies" that result in the unplanned loss of two or more BPS

⁶ As the Commission is well aware, the Courts have consistently held that the Commission cannot do indirectly that which it cannot do directly. *National Fuel Gas Supply Corp. v. FERC*, 909 F.2d 1519, 1522 (D.C. Cir. 1990); *Richmond Power & Light v. FERC*, 574 F.2d 610, 620 (D.C. Cir. 1978).

elements (TPL-003), and finally to “Extreme Events” that result in the loss of all lines on a right of way or all lines out of a substation (TPL-004). The events or contingencies for which the system must be tested are grouped into four discrete categories – A, B, C and D, each with its own list of contingency conditions and resulting performance requirements.

The Version 0 TPL-001 through TPL-004 Reliability Standards were initially derived from a single NERC Transmission Planning Standard that covered the entire range of contingencies (A through D) with descriptions of what considerations needed to be made across the entire spectrum of contingencies when running simulation studies. Because the original Transmission Planning Standard was broken into four discrete Reliability Standards, some of the continuity of what was contained in the original Transmission Planning Standard was lost. As a result, requirements such as R 1.3.10 have very limited applicability in the context of TPL-002 and only apply if one hypothesizes a unique base case condition in which one element of the primary protection system is out of service for planned maintenance (R 1.3.12). Hence the confusion regarding what is intended by R 1.3.10 of TPL-002 and the PacifiCorp request for interpretation. Understanding the genesis of the full spectrum of the Transmission Planning Standards is vital to fully understanding the applicability of the specific requirements of the current TPL family of standards.

Reliability Standard TPL-002-0 addresses transmission system planning related to performance under Category B contingencies (an event resulting in the loss of a single element).⁷ The loss of a single element is defined as a generator, transmission circuit, transformer, or a single DC pole with or without fault (*i.e.*, the occurrence of an event such as a short circuit, a broken wire or an intermittent connection). The stated purpose of TPL-002-0 is as follows:

⁷ NOPR at P 7.

System simulations and associated assessments are needed periodically to ensure that reliable systems are developed that meet specified performance requirements with sufficient lead time, and continue to be modified or upgraded as necessary to meet present and future system needs.

TPL-002-0 seeks to ensure that the future BPS is planned to meet the system performance requirements, with the loss of one element, by requiring that the Transmission Planner and Planning Authority annually evaluate and document the ability of the transmission system to meet the performance requirements where an event results in the loss of a single element. Generally, TPL-002-0 requires that the Planning Authority and Transmission Planner demonstrate through a valid assessment that the system performance requirements can be met in the event of a loss of a single element.

Requirement 1 provides:

The Planning Authority and Transmission Planner shall each demonstrate through a valid assessment that its portion of the interconnected transmission system is planned such that the Network can be operated to supply projected customer demands and projected Firm (non-recallable reserved) Transmission Services, at all demand levels over the range of forecast system demands, under the contingency conditions as defined in Category B of Table I.

Requirement 1.3 provides that an assessment must:

Be supported by a current or past study and/or system simulation testing that addresses each of the following categories,[] showing system performance following Category B of Table 1 (single contingencies). The specific elements selected (from each of the following categories) for inclusion in these studies and simulations shall be acceptable to the associated Regional Entity(ies).

One such category, Requirement R1.3.10 of TPL-002-0, provides that system performance studies include the effects of existing and planned protection systems, including any backup or redundant systems. In response to the PacifiCorp request for interpretation, NERC filed a proposed interpretation that Requirement R1.3.10 (simulations to assess the impact of

single-contingency operation) does not require an assessment of the transmission system performance due to a protection system failure or protection system misoperation. This interpretation addressed three questions posed by PacifiCorp to which the Reliability Standards Drafting Team provided the following responses:

- **Does TPL-002-0 R1.3.10 require that all elements that are expected to be removed from service through normal operation of the protection systems be removed in simulations?**

Response: *TPL-002-0 requires that System studies or simulations be made to assess the impact of single Contingency operation with Normal Clearing. TPL-002-0a R1.3.10 does require that all elements expected to be removed from service through normal operations of the Protection Systems be removed in simulations.*

- **Is a Category B disturbance limited to faults with normal clearing where the protection system operates as designed in the time expected with proper functioning of the protection system(s) or do Category B disturbances extend to protection system misoperations and failures?**

Response: *This standard does not require an assessment of the Transmission System performance due to a Protection System failure or Protection System misoperation. Protection System failure or Protection System misoperation is addressed in TPL-003-0 — System Performance following Loss of Two or More Bulk Electric System Elements (Category C) and TPL-004-0 — System Performance Following Extreme Events Resulting in the Loss of Two or More Bulk Electric System Elements (Category D).*

- **Does TPL-002-0 R1.3.10 require that planning for Category B contingencies assume a contingency that results in something other than a normal clearing event even though the TPL-002-0 Table I — Category B matrix uses the phrase “SLG or 3- Phase Fault, with Normal Clearing”?**

Response: *TPL-002-0a R1.3.10 does not require simulating anything other than Normal Clearing when assessing the impact of a Single Line Ground (SLG) or 3-Phase (3 \emptyset) Fault on the performance of the Transmission System.⁸*

In its NOPR, the Commission proposed an alternative interpretation “that the Requirement R1.3.10 of TPL-002-0 requires that planners study, in their system assessments, the

⁸ NERC Petition at pp. 10-11.

non-operation of primary protection systems in order to ascertain whether and how reliance on the as-designed backup or redundant protection systems affects reliability.”⁹ The Commission asserts that “NERC’s proposed interpretation miscategorizes non-operation of non-redundant primary protection systems as protection system failure which is addressed in TPL-003-0 and TPL-004-0.”¹⁰ The Commission also asserts that “by categorizing the non-operation of non-redundant primary protection systems as a protection system failure, NERC’s proposed interpretation misses studying the effects of backup and redundant protection systems pursuant to Requirement R1.3.10 of TPL-002-0.”¹¹ NERC disagrees with these assertions because they conflict with the language of the Reliability Standard.

TPL-002-0 relates to the case of Normal Clearing, not Delayed Clearing in which a protection system failure has occurred or fails to operate as designed for any reason. Under the TPL-002 Reliability Standard, Normal Clearing is defined as “when the protection system operates as designed and the Fault is cleared in the time normally expected with proper functioning of the installed protection systems.”¹² The Normal Clearing, as defined in the existing TPL-002 Commission-approved standard, would be required whether or not a non-redundant primary, backup, or redundant system is in place. That is, if a primary system were out for maintenance and backup or redundant systems were in place, the backup or redundant system would require Normal Clearing, for TPL-002-0 to apply. In the event that there were a misoperation or protection system failure of either the backup or redundant systems, then other Reliability Standards would apply (*e.g.*, TPL-003-0 and TPL-004-0).

⁹ NOPR at P 15.

¹⁰ *Id.*

¹¹ *Id.*

¹² *See* NERC Reliability Standard TPL-002-0 at note (e).

NERC’s interpretation does not mean that backup or redundant systems are not studied in the case of TPL-002-0. Requirement R1.3 of TPL-002-0 provides a list of categories from which the Planning Authority and Transmission Planner are expected to select specific elements to be included in studies and simulations of the prospective performance of a Planning Authority’s and Transmission Planner’s portion of the interconnected transmission system. However, the Planning Authority or Transmission Planner need not perform a system simulation for every possible condition, but rather Requirements 1.3.1 and 1.5 focus the contingencies to be addressed. In all events, TPL-002 requires the Planning Authority and Transmission Planner to “[c]onsider all contingencies applicable to Category B.”¹³

The Planning Authority and Transmission Planner can select one or more of the categories from the list provided in Requirements R1.3.1 through R1.3.12 to establish a base case. For example, a base case might include R1.3.5— “Have all projected firm transfers modeled.” The Planning Authority and Transmission Planner would then test whether the base case can meet the specified performance criteria following each of the Contingencies in Category B. Another base case might be created that includes R1.3.5 and R1.3.12— “Include the planned (including maintenance) outage of any bulk electric equipment (including protection systems or their components) at those demand levels for which planned (including maintenance) outages are performed.” Again, such a base case would be tested for its ability to meet the performance criteria following each of the Contingencies in Category B and assuming Normal Clearing by the protection systems that are in place.

Assume that a base case was created that included both R1.3.5 and 1.3.10, and was subjected to the Contingencies specified in Category B. First, the Planning Authority and Transmission Planner would simulate a single line to ground (“SLG”) or three-phase fault with

¹³ See NERC Reliability Standard TPL-002-0, Requirement 1.5.

Normal Clearing. (Normally, a three-phase fault will be the more severe test for the same prevailing clearing time, although there could be situations where a SLG fault or no fault may be more severe and should be simulated.) Under R1.3.10, this simulation must include the effects of existing and planned protection systems, including any backup or redundant systems.

However, a SLG or three-phase fault with Normal Clearing will, by definition, be cleared when the protection system operates as designed in the time normally expected with proper functioning of the installed protection systems. This case assumes that the primary protection system is operating correctly, obviating the need for any backup or redundant systems to be called on.

In contrast, assume that a base case was created that included, again, R1.3.5, R1.3.10 and R1.3.12 – “Include the planned (including maintenance) outage of any bulk electric equipment (including protection systems or their components) at those demand levels for which planned (including maintenance) outages are performed.” In this base case, the Planning Authority and Transmission Planner assume that a piece of bulk electric equipment is scheduled to be out of service, which could be a portion of the primary protection system. Accordingly, this base case should be tested for each of the Contingencies in Category B to determine its ability to meet the prescribed performance criteria. Unlike the previous example, R1.3.10 factors into the simulation because the backup or redundant primary protection system will be called on to clear a fault, and thus must be modeled into the simulation. Here too, Normal Clearing will, by definition, be cleared when the backup or redundant primary protection system operates as designed in the time normally expected with proper functioning of the installed protection systems. This scenario obviously assumes that the facility protected by the protection systems remained in service and operating while its primary protection system was out of service for maintenance.

The interpretation developed and approved through the NERC Reliability Standards Development Process does not miscategorize “non-operation of non-redundant primary protection systems as protection system failure,” as the Commission asserts.¹⁴ It properly recognizes that if non-redundant primary protection systems do not operate (non-operation) as designed, that is “protection system failure” by definition and not Normal Clearing. NERC’s interpretation also recognizes and contemplates that a base case should consider if a component of the “non-redundant primary protection system” is out for maintenance and how the back-up or redundant system must then be considered and whether there is Normal Clearing. Contingencies that include non-operation (*i.e.*, failure of a protection system) are studied under the Transmission Planning Reliability Standards that address more severe system conditions: TPL-003-0 — System Performance Following Loss of Two or More Bulk Electric System Elements (Category C) and TPL-004-0 — System Performance Following Extreme Events Resulting in the Loss of Two or More Bulk Electric System Elements (Category D). The Commission’s proffered alternative interpretation, by requiring an assessment of the transmission system performance due to a protection system non operation, failure or misoperation, is not consistent with the requirements of TPL-002-0 and presents a potential conflict with these Commission-approved Transmission Planning standards.

To put it another way, R1.3.10 of TPL-002-0 is a valid requirement for judging system performance, but only in those cases where the system is being studied to determine its ability to perform when a given primary protection system or one of its components is out of service for maintenance. If the simulation reveals that the system cannot meet the prescribed performance

¹⁴ NOPR at P 15.

requirements under these assumed study conditions, then the Planning Authority and Transmission Planner may need to recommend either:

- identifying timeframes and conditions for which the planned maintenance could be conducted;
- removing from service the line being protected by the maintained primary non-redundant protection system until the maintenance is completed and the primary protection system can be returned to service; or
- installing redundant primary or high-speed backup protection.

Given the above examples, the NERC-proposed interpretation correctly answers the questions posed by PacifiCorp and should be approved as filed by the Commission. NERC also notes that a comprehensive review and revision of the entire series of Transmission Planning Reliability Standards (TPL-001 through TPL-006) is underway. Any changes to these Reliability Standards will be filed with the Commission after approval through the NERC Reliability Standards Development Process and by the NERC Board of Trustees.¹⁵

¹⁵ See NERC Petition at p. 5 (stating that NERC Project 2006-02 — Assess Transmission Future Needs and Develop Transmission Plans — is expected to be completed in the first half of 2010).

IV. CONCLUSION

NERC respectfully requests that the Commission issue a Final Rule approving the interpretation that NERC filed for TPL-002-0. If the Commission perceives a deficiency in TPL-002-0, it should direct that NERC address the specific matter through the NERC Reliability Standards Development Process.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I have served a copy of the foregoing document upon all parties listed on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C. this 10th day of May, 2010.

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