

136 FERC ¶ 61,187
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

18 CFR Parts 39.10 and 40

[Docket No. RM11-16-000]

Transmission Relay Loadability Reliability Standard

(September 15, 2011)

AGENCY: Federal Energy Regulatory Commission.

ACTION: Notice of Proposed Rulemaking.

SUMMARY: Pursuant to section 215 of the Federal Power Act, the Commission proposes to approve Reliability Standard PRC-023-2 (Transmission Relay Loadability) submitted to the Commission for approval by the North American Electric Reliability Corporation (NERC), the Electric Reliability Organization (ERO) certified by the Commission. The proposed Reliability Standard requires transmission owners, generator owners, and distribution providers to set relays according to specific criteria in order to ensure that the relays reliably detect and protect the electric network from fault conditions, but do not limit transmission loadability or interfere with system operators' ability to protect system reliability. The Commission seeks comment from interested persons on the proposed Reliability Standard. The Commission also proposes to approve NERC Rules of Procedure Section 1700 – Challenges to Determinations. This proposed rule provides registered entities a means to challenge determinations made by planning coordinators under Reliability Standard PRC-023.

DATES: Comments are due [**Insert date 60 days after publication in the FEDERAL REGISTER**]

ADDRESSES: You may submit comments, identified by docket number RM11-16-000 and in accordance with the requirements posted on the Commission's web site, <http://www.ferc.gov>. Comments may be submitted by any of the following methods:

- Agency Web Site: <http://www.ferc.gov>. Documents created electronically using word processing software should be filed in native applications or print-to-PDF format and not in a scanned format, at <http://www.ferc.gov/docs-filing/efiling.asp>.
- Mail/Hand Delivery: Commenters unable to file comments electronically must mail or hand deliver their comments to: Federal Energy Regulatory Commission, Secretary of the Commission, 888 First Street, NE, Washington, DC 20426.

These requirements can be found on the Commission's web site, see, e.g., the "Quick Reference Guide for Paper Submissions," available at <http://www.ferc.gov/docs-filing/efiling.asp> or via phone from FERC Online Support at (202) 502-6652 or toll-free at 1-(866) 208-3676.

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SUPPLEMENTARY INFORMATION:

136 FERC ¶ 61,187
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Transmission Relay Loadability Reliability Standard

Docket No. RM11-16-000

NOTICE OF PROPOSED RULEMAKING

(September 15, 2011)

1. Pursuant to section 215 of the Federal Power Act (FPA),¹ the Commission proposes to approve Reliability Standard PRC-023-2 (Transmission Relay Loadability) submitted by the North American Electric Reliability Corporation (NERC), the Electric Reliability Organization (ERO) certified by the Commission. The proposed Reliability Standard requires transmission owners, generation owners, and distribution providers to set load-responsive phase protective relays according to specific criteria in order to ensure that the relays reliably detect and protect the electric network from fault conditions, but do not limit transmission loadability² or interfere with system operators' ability to protect system reliability. The Commission seeks comment from interested persons on the proposed Reliability Standard. The Commission also proposes to approve NERC Rules of Procedure Section 1700 – Challenges to Determinations also included in

¹ 16 U.S.C. § 824o (2006).

² In the context of the proposed Reliability Standard, “loadability” refers to the ability of protective relays to refrain from operating under load conditions.

NERC's filing. This proposed rule provides registered entities a means to challenge determinations made by planning coordinators under Reliability Standard PRC-023.

I. Background

A. Relay Protection Systems

2. Protective relays are devices that detect and initiate the removal of faults on an electric system.³ They are designed to read electrical measurements, such as current, voltage, and frequency, and can be set to recognize certain measurements as indicating a fault. When a protective relay detects a fault on an element of the system under its protection, it sends a signal to an interrupting device(s) (such as a circuit breaker) to disconnect the element from the rest of the system. Impedance relays are the most common type of relays used to protect transmission lines. They continuously measure voltage and current on the protected transmission line and operate when the measured magnitude and phase angle of the impedance (voltage/current) falls within the settings of the relay. Impedance relays can also provide backup protection and protection against remote circuit breaker failure.

3. On March 18, 2010, the Commission issued a Final Rule approving Reliability Standard PRC-023-1 (Transmission Relay Loadability), a Standard that requires transmission owners, generator owners, and distribution providers to set load-responsive

³ A "fault" is defined in the NERC Glossary of Terms used in Reliability Standards as "[a]n event occurring on an electric system such as a short circuit, broken wire, or an intermittent connection."

phase protection relays according to specific criteria to ensure that the relays reliably detect and protect the electric network from all fault conditions, but do not operate during non-fault load conditions.⁴ In addition, under section 215(d)(5) of the FPA, the Commission directed the ERO to develop modifications to the Standard to address certain issues identified by the Commission. At issue in the immediate proceeding is a revised Reliability Standard that addresses our directives in that order and will replace the currently effective PRC-023-1.

B. Reliability Standard PRC-023-1 and Order No. 733

4. Currently effective Reliability Standard PRC-023-1 applies to relay settings on (1) all transmission lines and transformers with low-voltage terminals operated or connected at or above 200 kV; and (2) those transmission lines and transformers with low voltage terminals operated or connected between 100 kV and 200 kV that are designated by planning coordinators as critical to the reliability of the bulk electric system.⁵ The Reliability Standard consists of three compliance requirements and Attachment A. Requirement R1 requires entities with certain transmission facilities to set their relays according to one of thirteen specific settings (sub-parts R1.1 through R1.13) designed to

⁴ *Transmission Relay Loadability Reliability Standard*, Order No. 733, 130 FERC ¶ 61,221 (2010), *order on reh'g and clarification*, Order No. 733-A, 134 FERC ¶ 61,127 (2011); *clarified*, Order No. 733-B, 136 FERC ¶ 61,185, (2011). Order No. 733-B is issuing concurrently with this Notice of Proposed Rule Making.

⁵ Pursuant to section 40.3 of the Commission's regulations, all Commission-approved Reliability Standards are available on NERC's website at www.nerc.com. See 18 CFR 40.3.

maximize loadability while maintaining Reliable Operation of the bulk electric system for all fault conditions. Requirement R2 provides additional obligations for entities that elect certain settings. Requirement R3 requires planning coordinators to designate facilities, operated between 100 kV and 200 kV, that are critical to the reliability of the bulk electric system and are therefore subject to Requirement R1. Attachment A specifies the protection systems that are subject to and excluded from the Standard's Requirements.

1. Currently Effective Requirement R1

5. Requirement R1 states that each transmission owner, generator owner, and distribution provider subject to Reliability Standard PRC-023-1 shall use one of the criteria prescribed in sub-parts R1.1 through R1.13 for any specific circuit terminal to prevent its phase protective relay setting from limiting transmission system loadability while maintaining reliable protection of the bulk electric system for all fault conditions.

6. In Order No. 733, the Commission directed the ERO, under section 215(d)(5) of the FPA, to develop modifications to Requirement R1 to: (1) require that transmission owners, generator owners, and distribution providers give their transmission operators a

list of transmission facilities that implement sub-part R1.2;⁶ (2) require entities that have protective relays set pursuant to sub-part R1.10 to verify that the limiting piece of equipment is capable of sustaining the anticipated overload for the longest clearing time associated with a fault;⁷ and (3) require the ERO to document, subject to audit by the Commission, and to make available for review to users, owners, and operators of the Bulk-Power System, by request, a list of those facilities that have protective relays set pursuant to sub-part R1.12.⁸

⁶ Order No. 733, 130 FERC ¶ 61,221 at P 186. Sub-part R.1.2 allows transmission owners, generation owners and distribution providers to “set transmission line relays so they do not operate at or below 115[percent] of the highest seasonal 15-minute Facility Rating of a circuit (expressed in amperes).” The Standard includes a footnote that states “[w]hen a 15-minute rating has been calculated and published for use in real-time operations, the 15 minute rating can be used to establish the loadability requirement for the protective relays.”

⁷ *Id.* P 203. Sub-part R.1.10 allows transmission owners, generation owners and distribution providers to set transformer fault protection relays and transmission line relays on transmission lines terminated only with a transformer . . . at or below the greater of:

[a.] 150 [percent] of the applicable maximum transformer nameplate rating (expressed in amperes), including the forced cooled ratings corresponding to all installed supplemental cooling equipment[; or]

[b.] 115 [percent] of the highest operator established emergency transformer rating.

⁸ *Id.* P 224. Sub-part R1.12 addresses setting transmission line distance relays to a maximum of 125 percent of the apparent impedance (at the impedance angle of the transmission line), subject to specified constraints, when the transmission line’s desired capability is limited by the requirement to adequately protect the transmission line.

2. Currently Effective Requirement R2

7. Requirement R2 states that transmission owners, generator owners, and distribution providers that use a circuit with the protective relay settings determined by the practical limitations described in specified R1 sub-parts must use the calculated circuit capability as the circuit's facility rating and must obtain the agreement of the planning coordinator, transmission operator, and reliability coordinator with the calculated circuit capability.

3. Currently Effective Requirement R3

8. Requirement R3 requires planning coordinators to designate which transmission lines and transformers with low-voltage terminals operated or connected between 100 kV and 200 kV are critical to the reliability of the bulk electric system and therefore subject to Requirement R1. Sub-part R3.1 requires planning coordinators to have a process to identify critical facilities. Sub-part R3.1.1 specifies that the process must consider input from adjoining planning coordinators and affected reliability coordinators. Sub-parts R3.2 and R3.3 require planning coordinators to maintain a list of critical facilities and provide it to reliability coordinators, transmission owners, generator owners, and distribution providers within 30 days of initially establishing it, and 30 days of any subsequent change.

9. Under section 215(d)(5) of the FPA, the Commission directed the ERO to modify Requirement R3 to: (1) apply an "add in" approach to sub-100 kV facilities that are owned or operated by currently registered entities or entities that become registered

entities in the future, and are associated with a facility that is included on a critical facilities list defined by the Regional Entity;⁹ (2) specify the test that planning coordinators must use to determine whether a sub-200 kV facility is critical to the reliability of the Bulk-Power System;¹⁰ and (3) add the Regional Entity to the list of entities that receive a list of sub-200 kV facilities determined by the planning coordinator to be critical to the reliability of the bulk electric system.¹¹ In addition, the Commission directed the ERO to develop an appeals process for entities to challenge a criticality determination.¹²

4. Currently Effective Attachment A

10. Attachment A to Reliability Standard PRC-023-1 specifies which protection systems are subject to and excluded from the Standard's Requirements. Section 1 of Attachment A provides that the Reliability Standard applies to any protective functions that can operate with or without time delay, on load current, including but not limited to: (1) phase distance; (2) out-of-step tripping; (3) switch-on-to-fault; (4) overcurrent relays; and (5) communication-aided protection applications. Section 2 states that the Reliability

⁹ *Id.* P 60.

¹⁰ *Id.* P 69.

¹¹ *Id.* P 237.

¹² *Id.* P 97.

Standard requires evaluation of out-of-step blocking schemes¹³ to ensure that they do not operate for faults during the loading conditions defined in the Standard's Requirements. Finally, section 3 expressly excludes certain relay elements and protection systems from the Reliability Standard's Requirements, such as relay elements enabled only when other relays or associated systems fail (e.g., overcurrent elements enabled only during abnormal system conditions or a loss of communications) and protection relay systems intended for the detection of ground fault conditions or for protection during stable power swings.

11. The Commission, under section 215(d)(5) of the FPA, directed the ERO to modify Attachment A to: (1) include section 2 as an additional Requirement with the appropriate violation risk factor and violation severity level in the Reliability Standard;¹⁴ and (2) include supervising relay elements on the list of relays and protection systems that are specifically subject to the reliability Standard.¹⁵

5. Currently Effective Implementation Plan

12. Reliability Standard PRC-023-1 established staggered effective dates for various Requirements and facilities. The Standard also included a footnote (exceptions footnote)

¹³ "Out-of-step blocking" refers to a protection system that is capable of distinguishing between a fault and a power swing. If a power swing is detected, the protection system, "blocks," or prevents the tripping of its associated transmission facilities.

¹⁴ *Id.* P 244.

¹⁵ *Id.* P 264.

to the “Effective Dates” section honoring temporary exceptions from enforcement actions approved by the NERC Planning Committee before NERC proposed the Reliability Standard.

13. In Order No. 733, the Commission directed the ERO, under section 215(d)(5), to modify the Reliability Standard to include an implementation plan for sub-100 kV facilities¹⁶ and to remove the exceptions footnote from the “Effective Dates” section of the Reliability Standard.¹⁷

II. NERC Petition for Proposed Reliability Standard PRC-023-2 and Rule of Procedure, Section 1700 – Challenges to Determinations

14. In a March 18, 2011 filing (NERC Petition), NERC requests Commission approval of both its proposed Reliability Standard PRC-023-2 (Transmission Relay Loadability) and its proposed NERC Rules of Procedure Section 1700 – Challenges to Determinations.

15. NERC states that the proposed Reliability Standard requires transmission owners, generator owners, and distribution providers to verify relay loadability using methods that achieve “the reliability goal of this Standard in an effective and efficient manner familiar to the responsible entities.”¹⁸ The proposed Standard also applies to out-of-step blocking systems as well as to load-responsive phase protections systems. NERC specifically

¹⁶ *Id.* P 283.

¹⁷ *Id.* P 284.

¹⁸ NERC Petition at 42.

identifies the benefits of proposed Reliability Standard PRC-023-2, as including (a) consistent identification of operationally critical circuits operated below 200 kV that must comply with the Requirements of the Standard, and (b) providing transmission operators, planning coordinators, reliability coordinators, and the ERO with more information regarding the criteria selected by entities for verifying relay loadability.¹⁹

A. Reliability Standard PRC-023-2

16. Proposed Reliability Standard PRC-023-2 contains six requirements with the stated purpose of ensuring that protective relay settings do not limit transmission loadability; do not interfere with system operators' ability to take remedial action to protect system reliability; and are set to reliably detect all fault conditions and protect the electrical network from these faults.²⁰ The proposed Reliability Standard also includes two attachments. Attachment A specifies the protection systems that are subject to and excluded from the Standard's Requirements. Attachment B specifies the criteria for determining the circuits which must comply with Requirements R1 through R5.

1. Proposed Requirement R1

17. The ERO describes proposed Reliability Standard PRC-023-2 Requirement R1 as follows:

¹⁹ NERC Petition at 5.

²⁰ Reliability Standard PRC-023-2, Section A.3 (Purpose).

Requirement R1 mandates that each Transmission Owner, Generator Owner, and Distribution Provider shall use any one of the identified criteria (Requirement R1, criteria 1 through 13) for any specific circuit terminal to prevent its phase protective relay settings from limiting transmission system loadability while maintaining reliable protection of the [bulk electric system] for all fault conditions. Each Transmission Owner, Generator Owner, and Distribution Provider shall evaluate relay loadability at 0.85 per unit voltage and power factor angle of 30 degrees[.]²¹

18. With the exception of clarifying language and the addition of criterion 10.1, proposed Requirement R1 retains the same criteria as currently existing PRC-023-1. Criteria 1 through 13 prescribe specific criteria to be used for certain transmission system configurations. These criteria account for the presence of devices such as series capacitors and address circuit and transformer thermal capability.

19. Criterion 1 specifies transmission line relay settings based on the highest seasonal facility rating using the 4-hour thermal rating of a transmission line, plus a design margin of 150 percent. Criterion 2 allows transmission line relays to be set so that they do not operate at or below 115 percent of the highest seasonal 15-minute facility rating of a circuit, when a 15-minute rating has been calculated and published for use in real-time operations. Criterion 3 allows transmission line relays to be set so that they do not operate at or below 115 percent of the maximum theoretical power capability. Criterion 4 may be applied where series capacitors are used on long transmission lines to increase power transfer. Criterion 5 applies in cases where the maximum end-of-line three-phase fault current is small relative to the thermal loadability of the conductor. Criterion 6 may

²¹ NERC Petition at 30.

be used for system configurations where generation is remote from load busses or main transmission busses.

20. Criterion 7 is appropriate for system configurations that have load centers that are remote from the generation center. Criterion 8 applies to system configurations that have one or more transmission lines connecting a remote, net importing load center to the rest of the system. Criterion 9 applies to the same system configuration, but applies to the load end. Criterion 10 is specific to transmission transformer fault protective relays and transmission lines terminated only with a transformer. Criterion 11 may be used for transformer overload protection relays when criterion 10 cannot be met. Criterion 12 may be used when the circuits have three or more terminals. The limited circuit loading capability established by this criterion will become the facility rating of the circuit. Finally, criterion 13 is intended to apply when otherwise supportable situations and practical limitations are identified under criteria 1 through 12.

21. Proposed Reliability Standard PRC-023-2 modifies PRC-023-1 by adding criterion 10.1 to address the Commission's directive that entities with protective relays set pursuant to criteria R1.10 must verify that the limiting piece of equipment is capable of sustaining the anticipated overload for the longest clearing time associated with a fault.²² The criterion requires coordination so that settings on a transformer's load responsive relay do not expose the transformer to a fault level and duration that exceeds the

²² *Id.* at 20.

transformer's mechanical withstand capability.²³ NERC states that, for through-faults, it is not possible to set fault protection relays to both meet the relay loadability requirement in criterion 10 and coordinate a transformer's thermal limits, but the mechanical damage threshold is more limiting than the thermal damage threshold. Moreover, NERC states, the permissible time duration to avoid thermal damage is longer than the maximum expected duration for which a through-fault would remain before being cleared by the protection system. Thus, requiring that transformer fault protection relays are set to not expose the transformer to a fault level and duration that exceeds the transformer's mechanical withstand capability assures the transformer will be capable of withstanding an overload for the longest clearing time associated with a fault on the low-voltage side of the transformer.²⁴

22. NERC believes that Requirement 10.1 is equally effective and efficient as the approach directed in Order No. 733.²⁵ It states that as a result of design constraints, transformers are more limiting than other series elements with regard to through-fault capability. Accordingly, coordinating transformer fault protection relays with the

²³ The mechanical withstand capability is determined on the basis of the transformer's design and the maintenance of that capability by the owner. Maintenance would be an issue if, for example, the moisture level in a transformer is allowed to increase above the design value but still within dielectric acceptance, the dielectric withstand capability could be compromised.

²⁴ *Id.* at 22-23.

²⁵ *Id.* at 20-21.

transformer mechanical withstand capability addresses the Commission's concerns underlying its directive even though it does not reference the most limiting piece of equipment. Because the fault withstand capability of terminal equipment is not always readily available, requiring entities to provide evidence that equipment in series with the transformer is capable of withstanding a through-fault current for the expected duration, NERC argues, is not necessary to address the Commission's concerns and places an unnecessary burden on entities.²⁶

2. **Proposed Requirement R2**

23. Proposed Reliability Standard PRC-023-2 adds a new Requirement R2 that requires each transmission owner, generation owner, and distribution provider to set its out-of-step blocking elements to allow tripping of phase protective relays for faults that occur during the loading conditions modeled under Requirement R1. NERC states that Requirement R2 has been added to proposed Reliability Standard PRC-023-2 to address the Commission's directive to include section 2 of PRC-023-1 Attachment A as an additional Requirement with the appropriate violation risk factor and violation severity level.²⁷ NERC has assigned this proposed Requirement a high Violation Risk Factor and a severe Violation Severity Level reflecting the impact to reliability of violating the Requirement.

²⁶ *Id.* at 23.

²⁷ NERC Petition at 24.

3. Proposed Requirements R3, R4, and R5

24. Requirement R3 in proposed Reliability Standard PRC-023-2 rennumbers and makes conforming edits to Requirement R2 from PRC-023-1. Proposed new Requirement R4 requires an entity that chooses to use Requirement R1 criterion 2 as the basis for verifying transmission line relay loadability to provide its planning coordinator, transmission operator, and reliability coordinator with an updated list of circuits associated with those transmission line relays at least once each calendar year. Similarly, proposed Reliability Standard PRC-023-2 adds a new Requirement R5 that requires entities that set transmission line relays according to Requirement R1 criterion 12 to provide an updated list of the circuits associated with those relays to its Regional Entity at least once each calendar year, to allow the ERO to compile a list of all circuits that have protective relays settings that limit circuit capability. NERC states that new Requirements R4 and R5, respectively, address the Commission's directives relating to providing transmission operators a list of transmission facilities that implement criterion 2 and directing that the ERO create a list of those facilities that have protective relays set pursuant to criterion 12.²⁸

4. Proposed Requirement R6

25. Requirement R6 of proposed Reliability Standard PRC-023-2 requires each planning coordinator to conduct an assessment at least once each calendar year (but no

²⁸ *Id.* at 23-24.

less frequently than every 15 months) by applying the criteria in Attachment B to determine the circuits in its planning coordinator area for which entities must comply with Requirements R1 through R5. Sub-part 6.1 requires the planning coordinator to maintain a list of circuits subject to PRC-023-2 per application of Attachment B identifying the year in which any criterion in Attachment B applies. Sub-part 6.2 requires the planning coordinator to provide the list to all Regional Entities, reliability coordinators, transmission owners, generators owners, and distribution providers within its planning coordinator area within 30 calendar days of establishing the initial list, and 30 days of any subsequent change thereto. NERC states that the proposed sub-part 6.2, formerly Requirement R3.3 in PRC-023-1, modifies the Requirement in order to address the Commission's directive to add the Regional Entity to the list of entities that receive the list of critical facilities.²⁹

5. Proposed Attachment A

26. Attachment A to proposed Reliability Standard PRC-023-2 includes a new section 1.6 that extends the Standard's applicability to include phase overcurrent supervisory elements (i.e., phase fault detectors) associated with current-based, communication-assisted schemes (i.e., pilot wire, phase comparison, and line current differential) where the scheme is capable of tripping for loss of communications. In addition, conforming changes are made to proposed section 2.1, formerly section 3.1 of the PRC-023-1, to

²⁹ *Id.* at 24.

recognize that elements described in new section 1.6 are no longer excluded from the proposed Standard's scope. NERC states that these changes have been made to address the Commission's directives to include supervising relay elements on the list of relays and protection systems that are specifically subject to the Reliability Standard.³⁰

27. NERC states that it believes proposed section 1.6 of Attachment A is equally effective and efficient in addressing the Commission's concern as the approach directed in Order No. 733.³¹ It states that modifying Attachment A to extend the scope of the proposed Reliability Standard to include all supervising relays as directed would have an unintended negative impact on system reliability by reducing the dependability and security of certain protection system, e.g., supervising phase distance (impedance) elements. It contends that the description in section 1.6 is tailored to avoid the negative impacts on reliability that could occur with an overly broad application of the proposed Standard to supervising relays.³²

6. Proposed Attachment B

28. Proposed Reliability Standard PRC-023-2 adds an Attachment B to specify six criteria that planning coordinators must use to identify sub-200kV facilities that, upon being so identified, are required to comply with the proposed Reliability Standard. The

³⁰ *Id.* at 25.

³¹ *Id.*

³² *Id.* at 26-27.

proposed criteria identify facilities using bright line criteria and analyses. A facility meets the bright line criteria if it:

- is a monitored facility of a permanent flowgate in the Eastern Interconnection, a major transfer path within the Western Interconnection, or a comparable monitored facility in the Quebec Interconnection, that has been included to address reliability concerns for loading of that circuit (Criteria B1);
- is a monitored facility of an interconnection reliability operating limit, where the limit was determined in the planning horizon pursuant to Reliability Standard FAC-010 (System Operating Limits Methodology for Planning Horizon) (Criteria B2); or
- forms a path to supply off-site power to a nuclear plant as established in the nuclear plant interface requirements pursuant to Reliability Standard NUC-001 (Nuclear Plant Interface Coordination) (Criteria B3).³³

A facility is identified through the analysis criteria if it:

- is identified through a sequence of power flow analyses specified in Attachment B and performed by the planning coordinator (Criteria B4);

³³ As we stated previously, “[w]e would expect that any [nuclear plant interface requirements] agreed to between a nuclear plant generator operator and transmission entity would include all facilities needed to transmit offsite power and auxiliary power to the nuclear facility. *Mandatory Reliability Standard for Nuclear Plant Interface Coordination*, 125 FERC ¶ 61,065, at P 51 (2008).

- is selected by the planning coordinator based on technical studies or assessments other than those specified above, in consultation with the facility owner (Criteria B5); or
- is mutually agreed upon for inclusion by the planning coordinator and the facility owner (Criteria B6).

NERC states that while the six criteria presented in Attachment B vary from some of the guidance provided in Order No. 733, they nonetheless identify all facilities that must be subject to proposed Reliability Standard PRC-023-2 in order to achieve the Standard's reliability objective.³⁴ NERC further reports that it is in the process of applying the test to a representative sample of utilities from each of the three Interconnections and plans to file the results of these tests by February 17, 2013. NERC plans to revise Attachment B, if necessary, pending the results of this test and clarifications made in Order No. 733-A.³⁵

29. Attachment B, unlike currently effective Reliability Standard PRC-023-1, does not state that the goal of screening sub-200 kV facilities is to identify those that are "critical to the reliability of the bulk electric system." Instead, NERC states that the test in Attachment B "is designed to identify circuits that if tripped on relay loadability following an initiating event could contribute to undesirable system performance similar

³⁴ NERC Petition at 14.

³⁵ *Id.* at 13.

to what occurred during the August 2003 Blackout. . . .”³⁶ This change in wording, NERC states, eliminates potential confusion regarding the use of the phrase “critical to the reliability of the bulk electric system” in the context of this Reliability Standard compared to other Standards such as those addressing critical infrastructure, and it presents the same meaning in an equally effective and efficient approach for referring to the circuits identified through the planning coordinators’ assessments.

30. The proposed Reliability Standard also omits reference to sub-100 kV facilities “that Regional Entities have identified as critical to the reliability of the [b]ulk [e]lectric [s]ystem” in favor of referring to “transmission lines operated below 100 kV and transformers with low voltage terminal connected below 100 kV that are part of the [bulk electric system].” NERC states that sub-100 kV circuits identified by the Regional Entities as critical facilities should be included in the definition of the bulk electric system and the proposed language conveys the same meaning in an equally effective and efficient manner.³⁷ This change in wording, NERC states, responds to confusion arising from the fact that very few such facilities have, as yet, been identified.

31. NERC is taking a three phase approach to addressing the various directives in Order No. 733. Phase I is intended to address directed modifications to PRC-023-1. Phase II entails development of a new Reliability Standard addressing generator relay

³⁶ *Id.* at 15.

³⁷ *Id.* at 16.

loadability, and Phase III consists of developing a new Reliability Standard addressing protective relay operations due to stable power swings. According to the NERC Petition, transmission lines that tripped unnecessarily during the August 2003 Blackout did not trip as a result of power swings up through the tripping of the Argenta-Battle Creek and the Argenta-Tompkins 345 kV lines, but subsequent line trips were due to power swings. While the power system did experience stable swings following each line trip prior to losing these two lines, the swings were not of significant magnitude and dampened quickly allowing the system to return to a new steady-state condition. For this reason, NERC asserts that analysis using steady-state base cases is the appropriate tool to assess the potential for lines to trip under similar conditions, and dynamic base cases are the appropriate tool to assess line tripping due to power swings. NERC has elected to limit the applicability test in Attachment B to power flow analysis with steady-state base cases and to address dynamic base cases in its Phase III Reliability Standard addressing power swings. This election, NERC states, is an equally efficient and effective approach to addressing all facets of the unnecessary line tripping caused by relay loadability that occurred during the August 2003 Blackout.

32. Order No. 733 provided guidance that a test to determine critical sub-200 facilities should include the same simulations and assessments as the Transmission Planning (TPL) Reliability Standards. While the TPL Standards permit manual system adjustments between two contingencies, NERC believes it is more informative, and in line with the reliability objective, to require testing of double contingencies without such manual adjustments, thereby modeling a situation in which an operator fails to, or does not have

time to, make appropriate system adjustments. This focused testing exceeds the requirements of the TPL Standards and, NERC asserts, is an equally efficient and effective approach to addressing the Commission's concern that the test must be sufficiently robust to provide assurance that all appropriate facilities are identified and made subject to the Reliability Standard for the Standard to achieve its purpose.

33. Order No. 733 also provided guidance regarding elements of a definition of desirable system performance that must inform any test to determine which sub-200 kV circuits are critical to system reliability. The Commission's guidance stated, among other things, that the power system should maintain all facilities within their applicable thermal (i.e., current), voltage, or stability ratings (short time ratings are applicable). NERC asserts that it is most appropriate to focus on avoiding thermal loading of transmission circuits. In order to achieve its reliability goal, NERC believes, Reliability Standard PRC-023-2 must apply to circuits whose relays will be challenged by excessive thermal loading to the point that a relay hampers the system operator's ability to take remedial action. The system performance measure in this test is less rigorous than that required by TPL-003 (System Performance Following Loss of Two or More BES Elements) because it ignores voltage and stability ratings. But, NERC points out that the contingency condition in Attachment B is more stringent than that in TPL-003 and the contingency and system performance measure were developed together in order to align with the reliability objective of the proposed Standard. NERC believes this test is an equally effective and efficient approach to addressing the Commission's concern regarding the rigorousness of the test.

7. Proposed Implementation Plan

34. NERC proposes staggered effective dates for Reliability Standard PRC-023-2, i.e., the mandatory compliance date after an allotted implementation period, for each of the Standard's requirements. The implementation plan provides 18 months for planning coordinators to apply the criteria in Attachment B and determine which sub-200 kV circuits must be subject to the Standard. Those entities responsible for compliance on circuits identified by a planning coordinator pursuant to Requirement R6 are provided until the first day of the first calendar quarter 39 months following notification to become compliant, or until the first day of the first calendar year in which any criterion in Attachment B applies if the planning coordinator identifies the circuit in an assessment of a future year more than 39 months beyond the year in which the assessment is conducted.

8. Violation Risk Factors/Violation Severity Levels

35. To determine a base penalty amount for a violation of a Requirement within a Reliability standard, NERC must first determine an initial range for the penalty amount. To do so, NERC assigns a violation risk factor to each Requirement of a Reliability Standard that relates to the expected or potential impact of a violation of the Requirement on the reliability of the Bulk-Power System. NERC may propose either a lower, medium, or high violation risk factor for each Requirement. The Commission has established guidelines for evaluating the validity of each violation risk factor

assignment.³⁸ NERC also assigns each Requirement one of four violation severity levels – low, moderate, high, and severe – as measurements for the degree to which the requirement was violated in a specific circumstance.³⁹ NERC assigns Requirements R1, R2, and R6 a “high” violation risk factor, Requirement R3 a “medium” violation risk factor, and Requirements R4 and R5 a “lower” violation risk factor. The NERC Petition proposes violation severity levels for each of the Requirements of proposed Reliability Standard PRC-023-2.

B. NERC Rules of Procedure Section 1700—Challenges to Determinations

36. Proposed NERC Rules of Procedure Section 1700—Challenges to Determinations allows registered entities to challenge a planning coordinator’s determination made under a Reliability Standard or terms defined in the Glossary of Terms Used in NERC Reliability Standards. Proposed Rule 1702 sets out the procedure for challenging a determination by a planning coordinator under Reliability Standard PRC-023-2. It provides that a registered entity is encouraged, but not required, initially to meet with the planning coordinator to resolve any dispute. If the matter cannot be resolved, the registered entity may challenge the determination with the appropriate Regional Entity,

³⁸ See *North American Electric Reliability Corp.*, 135 FERC ¶ 61,166 (2011); *North American Electric Reliability Corp.*, 119 FERC ¶ 61,145, *order on reh’g*, 120 FERC ¶ 61,145, at P 8-13 (2007).

³⁹ See *North American Electric Reliability Corp.*, 135 FERC ¶ 61,166; *North American Electric Reliability Corp.*, 123 FERC ¶ 61,284 (2008).

and if not satisfied with the Regional Entity's decision, may appeal to NERC. Review by NERC would initially be handled by a panel appointed by the NERC Board of Trustees. The Board of Trustees would then have the authority, but not the duty, to review the matter upon the request of the planning coordinator or registered entity. The final NERC decision may then be appealed to the applicable governmental authority, e.g., the Commission for appeals within the United States.

III. Discussion

37. We agree with NERC that the proposed Reliability Standard PRC-023-2 addresses the reliability gaps identified in Order No. 733 that relate specifically to Reliability Standard PRC-023-1 and represents an improvement in the Reliability Standard. Accordingly, under section 215(d)(2) of the FPA, the Commission proposes to approve the new Reliability Standard, including its Violation Risk Factors and Violation Severity Levels, as just, reasonable, not unduly discriminatory or preferential, and in the public interest. Also, under section 215(f) of the FPA, the Commission proposes to approve NERC Rule of Procedure Section 1700 – Challenges to Determinations as just, reasonable, not unduly discriminatory or preferential, in the public interest, and satisfying the requirements of section 215(c) of the FPA. NERC reports that it is in the process of applying the test set forth in Attachment B to a representative sample of utilities from each of the three Interconnections and will file the results of these tests in a report on or before February, 2013 (Report). In order to better understand the practical application of the test, the Commission proposes to direct the ERO to address specific matters described below in the Report.

38. Based on our review of NERC's petition and accompanying information, we propose to find that the proposed Reliability Standard and NERC Rule of Procedure Section 1700 – Challenges to Determinations adequately address the directed modifications set forth in Order No. 733 regarding Reliability Standard PRC-023-1. Specifically, we propose to find that proposed Reliability Standard PRC-023-2 and the proposed NERC Rule of Procedure address the following Order No. 733 directives: (1) adopt an “add in” approach to sub-100 kV facilities and modify Requirement R3 to specify the test planning coordinators must use to determine whether a sub-200 kV facility is critical to reliability; (2) establish a mechanism for registered entities to challenge criticality determinations; (3) require applicable entities to notify transmission operators of facilities that implement sub-requirement R1.2; (4) modify sub-requirement R1.10 to require verification that the limiting piece of equipment can sustain the anticipated overload; (5) direct the ERO to document facilities that have protective relays set pursuant to sub-requirement R1.12; (6) add Regional Entities to the list of those that receive the critical facilities list pursuant to sub-requirement 3.3; (7) include section 2 of Attachment A as an additional Requirement; (8) revise section 1 of Attachment A to include supervising relay elements associated with the identified reliability concern subject to the Standard; (9) create an implementation plan for sub-100 kV facilities; and (10) remove the exceptions footnote from the “Effective Dates” section. In light of the manner in which it addresses these directives, the proposed Reliability Standard represents an improvement in transmission relay loadability.

39. Attachment A to the proposed Reliability Standard has been modified to extend coverage of the Standard to phase overcurrent supervisory elements associated with current-based, communication-assisted schemes capable of tripping for loss of communications. While the description of the supervisory elements is more specific than the directive in Order No. 733,⁴⁰ the proposed Attachment A reflects industry comment regarding the potential for unintended, negative reliability consequences that could arise from an overly broad description. In light of the explanation provided and our reliability concern,⁴¹ we consider the proposed alternative solution to be an equally effective and efficient approach to addressing the Commission's reliability concerns.

40. Transmission relay loadability is important to ensuring the reliability of the Bulk-Power System. The ERO has proposed changes to currently effective Reliability Standard PRC-023-1 on many issues, including (1) extending its coverage to communication assisted supervising elements and out-of-step blocking schemes; (2) requiring that a uniform test is applied consistently by planning coordinators utilizing their judgment to identify sub-200 kV circuits to which the Reliability Standard must apply; (3) requiring that load responsive transformer fault protection relays be set to reflect the transformer's mechanical withstand capability; and (4) ensuring communication regarding the ratings used to verify transmission facility relay loadability.

⁴⁰ Order No. 733, 130 FERC ¶ 61,221 at P 264.

⁴¹ *Id.* P 251.

These changes extend and strengthen the reliability benefits currently effective Reliability Standard PRC-023-1 was designed to achieve.

41. Attachment B to the proposed Reliability Standard specifies the test planning coordinators are required to use to determine whether a sub-200 kV facility is critical to reliability. NERC states that it plans to revise the test, if necessary, based on the results of this testing and the clarifications regarding the test made in Order No. 733-A.⁴² The Commission seeks to better understand the implementation and effects of Requirement R6, and criteria B4 and B5, as they are used to identify operationally critical sub-200 kV facilities.

**Questions Regarding Test to Determine
Critical Sub-200 kV Facilities**

42. Criterion B4 of Attachment B requires application of proposed Reliability Standard PRC-023-2 to any circuit identified through a specified set of power flow analyses performed by planning coordinators. Planning coordinators must apply their engineering judgment in the simulation of double contingency combinations in order to determine which combinations of contingencies result in undesirable tripping. In guidance given in Order No. 733, the Commission stated that for Category C contingencies (i.e., events resulting in the loss of two or more elements) desirable system performance includes, among other things, the maintenance of all facilities within their

⁴² NERC Petition at 13.

applicable thermal, voltage, or stability ratings (short time ratings are applicable).⁴³ An impedance relay reads the magnitude and phase angle of both the current and voltage quantities, and if the combination results in an apparent impedance that encroaches or penetrates the relay's operational settings, the relay is susceptible to undesirable tripping. The performance standard proposed in Attachment B requires the planning coordinator to monitor thermal ratings but does not consider the other parameters that could result a relay trip event without high currents.

43. NERC states that though “the system performance measure in this test is less stringent than required for Category C contingencies in TPL-003, it is important to note that the contingency itself is more stringent than a Category C contingency [because it does not allow manual system adjustments between the two contingencies as does a Category C contingency], and the contingency and system performance measure have been developed together. . . .”⁴⁴ However, the standard is silent as to the rigor of the simulations other than requiring the planning coordinators to apply their engineering judgment. We propose that the ERO address in the Report whether the power system assessment proposed in criterion B4 includes the critical system conditions utilized under

⁴³ Order No. 733, 130 FERC ¶ 61,221 at P 84.

⁴⁴ NERC Petition at 19.

Reliability Standard TPL-003-0 Requirement R1.3.2⁴⁵ and whether applicable entities evaluate relay loadability under the B4 criterion consistent with Requirement R1 which requires, in part, that they “evaluate relay loadability at 0.85 per unit voltage and a power factor angle of 30 degrees” in addition to applicable current criteria. If the evaluation uses other per unit voltage and power factor angle assumptions, we propose that the Report include a comparison of results obtained from those that would be achieved were the assumptions consistent with Requirement R1.

44. Criterion B5 of Attachment B requires compliance with the proposed Reliability Standard with respect to a “circuit ... selected by the Planning Coordinator based on technical studies or assessments, other than those specified in criteria B1 through B4, in consultation with the Facility owner.” The Commission proposes that the Report comment on what “technical studies or assessments” planning coordinators use to identify critical facilities.

45. According to the NERC Petition, “[d]uring the standard development process, a number of industry comments expressed concern with potential confusion regarding use of the phrase ‘critical to the reliability of the bulk electric system’ in the context of PRC-023-1 versus other standards such as those addressing critical infrastructure.”⁴⁶ As a

⁴⁵ Reliability Standard TPL-003-0 Requirement R1.3.2 provides that a transmission planner assessment shall “[c]over critical system conditions and study years as deemed appropriate by the responsible entity.”

⁴⁶ NERC Petition at 15.

result, the proposed Requirement R6 omits that phrase and refers instead to circuits “for which Transmission Owners, Generator Owners, and Distribution Providers must comply with Requirements R1 through R5.” In contrast, however, the Blackout Report used the phrase “operationally significant,” and the test in Attachment B is “designed to identify circuits that if tripped on relay loadability following an initiating event could contribute to undesirable system performance similar to what occurred during the August 2003 Blackout.”⁴⁷ Notwithstanding the various phrases used to describe the reliability objective, the NERC Petition indicates that the test is intended to identify all circuits in a planning coordinator’s area that could have an operational impact on the reliability of the bulk electric system. The Commission proposes that the Report assess whether Attachment B is sufficiently comprehensive to capture all such circuits.

Summary

46. In summary, the Commission proposes to approve proposed Reliability Standard PRC-023-2 as just, reasonable, not unduly discriminatory or preferential, and in the public interest. We also propose to approve proposed NERC Rules of Procedure Section 1700 – Challenges to Determinations as just, reasonable, not unduly discriminatory or preferential, in the public interest, and satisfying the requirements of section 215(c) of the FPA. In addition, the Commission proposes that NERC addresses in the Report

⁴⁷ *Id.*

questions regarding the system assessment simulations and results of the power flow analyses criterion in the proposed test for critical facilities.

IV. Information Collection Statement

47. The Office of Management and Budget (OMB) regulations require approval of certain information collection requirements imposed by agency rules.⁴⁸ Upon approval of a collection(s) of information, OMB will assign an OMB control number and expiration date. Respondents subject to the filing requirement of this rule will not be penalized for failing to respond to these collections of information unless the collections of information display a valid OMB control number. The Paperwork Reduction Act (PRA)⁴⁹ requires each federal agency to seek and obtain OMB approval before undertaking a collection of information directed to ten or more persons, or continuing a collection for which OMB approval and validity of the control number are about to expire.⁵⁰

48. The Commission is submitting these reporting and recordkeeping requirements to OMB for its review and approval under section 3507(d) of the PRA. Comments are solicited on the Commission's need for this information, whether the information will have practical utility, the accuracy of provided burden estimates, ways to enhance the quality, utility, and clarity of the information to be collected, and any suggested methods

⁴⁸ 5 CFR 1320.11.

⁴⁹ 44 U.S.C. 3501-20

⁵⁰ 44 U.S.C. 3502(3)(A)(i), 55 USC 3507(a)(3).

for minimizing the respondent's burden, including the use of automated information techniques.

49. This Notice of Proposed Rulemaking proposes to approve Reliability Standard PRC-023-2 (Transmission Relay Loadability) which will replace currently effective Reliability Standard PRC-023-1 approved by the Commission in Order No. 733. Rather than creating entirely new requirements regarding the setting of protective relays, the proposed Reliability Standard instead modifies and improves the existing Reliability Standard. Thus this proposed rulemaking does not impose entirely new burdens on the effected entities. For example, the currently effective Reliability Standard PRC-023-1 requires transmission owners, generation owners, and distribution providers to each have evidence to show that each of its transmission relays are set according to one of the criteria in criteria R1.1 through R1.13. Similarly, proposed Reliability Standard PRC-023-2 requires transmission owners, generation owners, and distribution providers to have evidence that each of its transmission relays is set according to one of the 13 criteria in Requirement R1 but adds that each such entity shall also have evidence that relays set according to criterion 10 do not expose the transformer to fault levels and durations beyond those indicated in the Standard. Thus, the recordkeeping obligations for some Requirements are more specific but not necessarily more expansive than those of currently effective Reliability Standard PRC-023-1. However, proposed PRC-023-2 does add new Requirements, each of which has new recordkeeping obligations.

50. Proposed Requirement R2 will require each transmission owner, generator owner, and distribution provider to have evidence that its out-of-step blocking elements are set in

accordance with the Standard, and proposed Requirements R4 and R5 will require those same entities to maintain evidence that they have informed the appropriate parties of their updated lists of certain circuits. Under Requirement R6, planning coordinators will be required to execute a test for applicability of the Standard as set forth in Attachment B and retain analyses, calculation summaries, or study reports to evidence execution of the test, whereas under the currently effective PRC-023-1, a test was required but only the results needed to be retained. Because an unspecified test is currently required to be carried out on facilities operated at between 100 kV and 200 kV under currently effective Reliability Standard PRC-023-1, for purposes of this analysis, we assume that there is little additional cost for planning coordinators to implement and document that portion of the test. However, the proposed Requirement R6 imposes the new burdens of performing the test on sub-100 kV facilities, maintaining appropriate records, and distributing the list of circuits identified by the test to Regional Entities.

51. Public Reporting Burden: Our estimate below regarding the number of respondents is based on the NERC compliance registry as of July 29, 2011. According to the NERC compliance registry, there are 335 transmission owners, 793 generation owners, 553 distribution providers, and 72 planning coordinators. However, under NERC's compliance registration program, entities may be registered for multiple functions, so these numbers incorporate some double counting. The net number of entities responding will be approximately 645 entities registered as a transmission owner, a distribution provider, or a generation owner that is also a transmission owner and/or a

distribution owner, and 72 planning coordinators.⁵¹ The estimated burden for the requirements in this Order follow:

Changes to FERC-725G Data Collection	Number of Respondents Annually (1)	Number of Responses Per Respondent (2)	Average Burden Hours Per Response⁵² (3)		Total Annual Hours (1x2x3)
R1 criterion 1.10: TOs, GOs, and DPs must analyze and document criterion 1.10 compliance	645	1	<i>Analysis for compliance documents</i>	8	5,160
			<i>Record Retention</i>	2	1,290
R2: TOs, GOs, and DPs must perform analysis and retain evidence of compliance	645	1	<i>Analysis for compliance documents</i>	8	5,160
			<i>Record Retention</i>	2	1,290
R4 and R5: TOs, GOs, and DPs must distribute updated lists and retain evidence that lists were distributed	645	1	<i>Reporting (dist. of list)</i>	10	6,450
			<i>Record Retention</i>	10	6,450

⁵¹ Under its applicability provisions, proposed Reliability Standard applies to specified circuits such that very few, if any, generator owners that are not also a transmission owner and/or a distribution provider will be subject to the Standard.

⁵² The burden hours are based on estimates that the Commission has used for similar reporting requirements.

R6: PC must perform assessment, distribute list of circuits and retain evidence of testing and distribution ⁵³	72	1	<i>Reporting (assessment and dist. of list)</i>	20	1,440
			<i>Record Retention</i>	10	720
Total					27,960

Information Collection Costs: The Commission seeks comments on the costs to comply with these requirements and recordkeeping burden associated with Reliability Standard PRC-023-2.

- Total Annual Hours for Collection: (Reporting and Record Retention) = 27,960 hours.
- Total Estimated Reporting/Analysis Cost = 18,210 hours @ \$120/hour = \$2,185,200.
- Total Estimated Record Retention Cost = 9,750 hours @ \$28/hour = \$273,000.
- Total Estimated Annual Cost (reporting + Record Retention)⁵⁴ = \$2,458,200.
- Title: Mandatory Reliability Standards for the Bulk-Power System

⁵³ This applies to the portion of R6 that deals with testing for sub-100 kV facilities as described in the text. In addition it includes burden hours associated with adding Regional Entities to the list of entities to receive a list of circuits from the planning coordinator.

⁵⁴ The hourly reporting cost is based on the estimated cost of an engineer to implement the requirements of the rule. The record retention cost comes from Commission staff research on record retention requirements.

- Action: FERC 725G, Proposed Modification to FERC-725G.
- OMB Control No: 1902-0252.
- Respondents: Business or other for profit, and/or not for profit institutions.
- Frequency of Responses: On occasion.
- Necessity of the Information: This proposed rule would approve a revised Reliability Standard that modifies an existing requirement regarding setting protective relays according to specific criteria in order to ensure that the relays reliably detect and protect the electric network from all fault conditions, but do not limit transmission loadability or interfere with system operators' ability to protect system reliability. Proposed Reliability Standard PRC-023-2 requires entities to set transmission relays according to specified criteria and to retain evidence of compliance. It also requires planning coordinators to implement a test to determine which sub-200 kV facilities are critical to the reliability of the power system and subjects such facilities to the requirements of the proposed Standard. The proposed Reliability Standard requires entities to maintain records subject to review by the Commission and NERC to ensure compliance with the Reliability Standard.
- Internal review: The Commission has reviewed the requirements pertaining to the proposed Reliability Standard for the Bulk-Power System and determined that the proposed requirements are necessary to meet the statutory provisions of the Energy Policy Act of 2005. These requirements conform to the Commission's plan for efficient information collection, communication and management within the energy industry. The

Commission has assured itself, by means of internal review, that there is specific objective support for the burden estimates associated with the information requirements.

52. Interested persons may obtain information on the reporting requirements by contacting: Federal Energy Regulatory Commission, 888 First Street, NE, Washington, DC 20426 [Attention: Ellen Brown, Office of the Executive Director, e-mail: DataClearance@ferc.gov, Phone: (202) 502-8663, fax: (202) 273-0873]. Comments on the requirements of this order may also be sent to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503 [Attention: Desk Officer for the Federal Energy Regulatory Commission]. For security reasons, comments should be sent by e-mail to OMB at oira_submission@omb.eop.gov. Please reference OMB Control Number 1902-0252 and the docket number of this Order in your submission.

V. **Environmental Analysis**

53. The Commission is required to prepare an Environmental Assessment or an Environmental Impact Statement for any action that may have a significant adverse effect on the human environment.⁵⁵ The actions proposed here fall within the categorical exclusion in the Commission's regulations for rules that are clarifying, corrective or

⁵⁵ *Regulations Implementing the National Environmental Policy Act*, Order No. 486, 52 FR 47897 (Dec. 17, 1987), FERC Stats. & Regs. Regulations Preambles 1986-1990 ¶ 30,783 (1987).

procedural, for information gathering, analysis, and dissemination.⁵⁶ Accordingly, neither an environmental impact statement nor environmental assessment is required.

VI. Regulatory Flexibility Act Analysis

54. The Regulatory Flexibility Act of 1980 (RFA)⁵⁷ generally requires a description and analysis of proposed and final rules that will have significant economic impact on a substantial number of small entities. The RFA mandates consideration of regulatory alternatives that accomplish the stated objectives of a proposed order and that minimize any significant economic impact on a substantial number of small entities. The Small Business Administration's (SBA) Office of Size Standards develops the numerical definition of a small business.⁵⁸ The SBA has established a size standard for electric utilities, stating that a firm is small if, including its affiliates, it is primarily engaged in the transmission, generation and/or distribution of electric energy for sale and its total electric output for the preceding twelve months did not exceed four million megawatt-hours.⁵⁹

55. Proposed Reliability Standard PRC-023-2 modifies currently existing Reliability Standard PRC-023-1 which requires applicable entities to set protective relays according to specific criteria, to communicate about such settings with specified entities, and to

⁵⁶ 18 CFR 380.4(a)(5).

⁵⁷ 5 U.S.C. 601-612.

⁵⁸ 13 CFR 121.101.

⁵⁹ 13 CFR 121.201, Sector 22, Utilities & n. 1.

conduct assessments to determine the applicability of the Standard to 100-200 kV facilities. The proposed standard modifies PRC-023-1 by (1) increasing communication and documentation requirements, (2) extending the applicability of the Standard to formerly excluded relays, and (3) standardizing the terms of the assessment whose terms were formerly not specified. In addition, proposed PRC-023-2 extends the current requirement that planning coordinators annually assess which 100-200 kV circuits must be brought into compliance with the Standard and will require planning coordinators to carry out the assessment with respect to some sub-100 kV facilities.

56. Comparison of the NERC compliance registry with data submitted to the Energy Information Administration on Form EIA-861 indicates that perhaps as many 103 transmission owners, 329 distribution providers, 46 generation owners, and 8 planning coordinators qualify as small entities. However, under NERC's compliance registration program, entities may be registered for multiple functions, so these numbers incorporate some double counting. The net number of registered entities that qualify as small entities responding to this rule will be approximately 339 entities registered as a transmission owner, a distribution provider, or a generation owner that is also a transmission owner and/or a distribution provider, and 8 planning coordinators. The proposed rule directly affects each of the small entities. Therefore, FERC has determined that this proposed rule will have an impact on a substantial number of small entities. However, the Commission has determined that the impact on entities affected by the proposed rule will not be significant. The Commission estimates that in order to comply with the Standard's modification of existing requirements each of the small entities registered as planning

coordinators will face a cost of \$2,680 and each of the remaining small entities (transmission owners, distribution providers, or generation owners that are also transmission owners and/or distribution providers) will face a cost of \$3,512.

Accordingly, the Commission determines that the incremental cost of Reliability Standard PRC-023-2 (going from PRC-023-1 to PRC-023-2) is minimal, and should not present a significant operating cost to any of the small entities.

57. Based on this understanding, the Commission certifies that this Reliability Standard will not have a significant economic impact on a substantial number of small entities. Accordingly, no regulatory flexibility analysis is required.

58. The Commission invites comment from members of the public regarding the accuracy of the certification provided here, the economic analysis, and its underlying assumptions.

VII. Comment Procedures

59. The Commission invites interested persons to submit comments on the matters and issues proposed in this notice to be adopted, including any related matters or alternative proposals that commenters may wish to discuss. Comments are due [Insert date 60 days from publication in the **FEDERAL REGISTER**]. Comments must refer to Docket No. RM11-16-000, and must include the commenter's name, the organization they represent, if applicable, and their address in their comments.

60. Commenters may submit comments, identified by Docket No. RM11-16-000 and in accordance with the requirements posted on the Commission's web site,

<http://www.ferc.gov>. Comments may be submitted by any of the following methods:

- Agency Web Site: Documents created electronically using word processing software should be filed in native applications or print-to-PDF format, and not in a scanned format, at <http://www.ferc.gov/docs-filing/efiling.asp>.
- Mail/Hand Delivery: Commenters unable to file comments electronically must mail or hand deliver their comments to: Federal Energy Regulatory Commission, Secretary of the Commission, 888 First Street, NE, Washington, DC 20426. These requirements can be found on the Commission's web site, see, e.g., the "Quick Reference Guide for Paper Submissions," available at <http://www.ferc.gov/docs-filing/efiling.asp> or via phone from FERC Online Support at (202) 502-6652 or toll-free at 1-(866) 208-3676.

61. All comments will be placed in the Commission's public files and may be viewed, printed, or downloaded remotely as described in the Document Availability section below. Commenters on this proposal are not required to serve copies of their comments on other commenters.

VIII. Document Availability

62. In addition to publishing the full text of this document in the Federal Register, the Commission provides all interested persons an opportunity to view and/or print the contents of this document via the Internet through FERC's Home Page (<http://www.ferc.gov>) and in FERC's Public Reference Room during normal business hours (8:30 a.m. to 5:00 p.m. Eastern time) at 888 First Street, NE, Room 2A, Washington, DC 20426.

63. From FERC's Home Page on the Internet, this information is available on eLibrary. The full text of this document is available on eLibrary in PDF and Microsoft

Word format for viewing, printing, and/or downloading. To access this document in eLibrary, type the docket number excluding the last three digits of this document in the docket number field.

64. User assistance is available for eLibrary and the FERC's website during normal business hours from FERC Online Support at (202)-502-6652 (toll free at 1-(866) 208-3676) or email at ferconlinesupport@ferc.gov, or the Public Reference Room at (202) 502-8371, TTY (202) 502-8659. E-mail the Public Reference Room at public.referenceroom@ferc.gov.

By direction of the Commission.

Nathaniel J. Davis, Sr.,
Deputy Secretary.