

144 FERC ¶ 61,205
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

18 CFR Part 40

[Docket No. RM13-16-000]

Generator Verification Reliability Standards

(Issued September 19, 2013)

AGENCY: Federal Energy Regulatory Commission.

ACTION: Notice of proposed rulemaking.

SUMMARY: Pursuant to section 215 of the Federal Power Act, the Federal Energy Regulatory Commission (Commission) proposes to approve the following Reliability Standards that were submitted to the Commission for approval by the North American Electric Reliability Corporation, the Commission-certified Electric Reliability

Organization: MOD-025-2 (Verification and Data Reporting of Generator Real and Reactive Power Capability and Synchronous Condenser Reactive Power Capability), MOD-026-1 (Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions), MOD-027-1 (Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions), PRC-019-1 (Coordination of Generating Unit or Plant Capabilities, Voltage Regulating Controls, and Protection), and PRC-024-1 (Generator Frequency and Voltage Protective Relay Settings). The proposed generator verification Reliability Standards help ensure that verified data is available for power system planning and operational studies by

requiring the verification of generator equipment needed to support Bulk-Power System reliability and enhance coordination of important protection system settings.

The Commission proposes to approve, with modifications, the associated implementation plans, violation risk factors and violation severity levels. The Commission also proposes to approve the retirement of existing Reliability Standards MOD-024-1 (Verification of Generator Gross and Net Real Power Capability) and MOD-025-1 (Verification of Generator Gross and Net Reactive Power Capability) prior to the effective date of MOD-025-2.

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

ADDRESSES: You may submit comments, identified by docket number by any of the following methods:

- Agency Web Site: <http://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.
- 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.

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SUPPLEMENTARY INFORMATION:

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Generator Verification Reliability Standards

Docket No. RM13-16-000

NOTICE OF PROPOSED RULEMAKING

(Issued September 19, 2013)

1. Under section 215 of the Federal Power Act (FPA)¹ the Commission proposes to approve five Reliability Standards that were submitted to the Commission for approval by the North American Electric Reliability Corporation (NERC), the Commission-certified Electric Reliability Organization (ERO): MOD-025-2 (Verification and Data Reporting of Generator Real and Reactive Power Capability and Synchronous Condenser Reactive Power Capability), MOD-026-1 (Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions), MOD-027-1 (Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions), PRC-019-1 (Coordination of Generating Unit or Plant Capabilities, Voltage Regulating Controls, and Protection), and PRC-024-1 (Generator Frequency and Voltage Protective Relay Settings). The Commission proposes to approve, with modifications, the associated implementation plans, violation risk factors and violation severity levels. The Commission also proposes to approve the retirement of existing Reliability Standards MOD-024-1 and MOD-025-1 immediately prior to the effective date of MOD-025-2.

¹ 16 U.S.C. 824o (2006).

2. The purpose of the proposed Reliability Standards is to ensure that generators remain in operation during specified voltage and frequency excursions; properly coordinate protective relays and generator voltage regulator controls; and ensure that generator models accurately reflect the generator's capabilities and equipment performance. Proposed Reliability Standards MOD-026-1, MOD-027-1, PRC-019-1 and PRC-024-1 are new whereas proposed Reliability Standard MOD-025-2 consolidates two existing standards, MOD-024-1 (Verification of Generator Gross and Net Real Power Capability) and MOD-025-1 (Verification of Generator Gross and Net Reactive Power Capability) into one new Reliability Standard. Portions of proposed Reliability Standards MOD-025-2 and PRC-024-1 respond to Commission directives issued in Order No. 693.²

3. Collectively, the proposed Reliability Standards improve the accuracy of model verifications needed to support reliability and enhance the coordination of generator protection systems and voltage regulating system controls. Such improvements should help reduce the risk of generator trips and provide more accurate models for transmission planners and planning coordinators to develop system models and simulations.

4. In contrast to the greater than 20 MVA applicability threshold for the three other proposed Reliability Standards in NERC's petition, proposed standards MOD-026-1 and MOD-027-1 would exclude units rated below 100 MVA (Eastern and Quebec Interconnections), 75 MVA (Western Interconnection) and 50 MVA (ERCOT

² See *Mandatory Reliability Standards for the Bulk-Power System*, Order No. 693, FERC Stats. & Regs. ¶ 31,242, *order on reh'g*, Order No. 693-A, 120 FERC ¶ 61,053 (2007).

Interconnection). This difference in applicability thresholds could exclude approximately 20 percent of registered generator owners/operators from compliance. The Commission seeks comment on whether the higher applicability thresholds limit the overall effectiveness of the proposed Reliability Standards, especially in areas with a high concentration of generators falling below the thresholds.

5. Further, proposed Reliability Standard MOD-026-1 contains a provision allowing transmission planners to compel certain generator owners to comply with the proposed standard's Requirements if the generator owners are deemed to have "technically justified" units, even if the generators fall below the stated applicability threshold. The Commission seeks comment on this proposed process, and also seeks comment regarding whether this provision should be included in proposed Reliability Standard MOD-027-1.

I. Background

Section 215 of the FPA and Order No. 693 Directives

6. Section 215 of the FPA requires a Commission-certified ERO to develop mandatory and enforceable Reliability Standards, subject to Commission review and approval. Specifically, the Commission may approve, by rule or order, a proposed Reliability Standard or modification to a Reliability Standard if it determines that the Reliability Standard is just, reasonable, not unduly discriminatory or preferential, and in the public interest.³ Once approved, the Reliability Standards may be enforced by the

³ 16 U.S.C. 824o(d)(2).

ERO, subject to Commission oversight, or by the Commission independently.⁴

7. Pursuant to section 215 of the FPA, the Commission established a process to select and certify an ERO,⁵ and subsequently certified NERC.⁶ On March 16, 2007, the Commission issued Order No. 693, approving 83 of the 107 Reliability Standards filed by NERC. Because MOD-024-1 and MOD-025-1, which NERC had included in its filing, involved regional procedures that had not been submitted, the Commission postponed either approving or remanding these standards until NERC submitted additional information. However, the Commission issued directives in Order No. 693 with respect to MOD-024-1 and MOD-025-1 that NERC states are addressed in proposed Reliability Standard MOD-025-2.

8. Reliability Standards MOD-024-1 and MOD-025-1 were “fill-in-the-blank” Reliability Standards that required regional reliability organizations to develop procedures to verify generator real and reactive power capability, respectively. Regarding MOD-024-1, the Commission directed NERC to clearly define the test conditions and methodologies contained in the Reliability Standard, and also to clarify the time period within which regional reliability organizations must provide generator

⁴ *Id.* 824o(e)(3).

⁵ *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672, FERC Stats. & Regs. ¶ 31,204, *order on reh’g*, Order No. 672-A, FERC Stats. & Regs. ¶ 31,212 (2006).

⁶ *North American Electric Reliability Corp.*, 116 FERC ¶ 61,062, *order on reh’g and compliance*, 117 FERC ¶ 61,126 (2006), *aff’d sub nom. Alcoa, Inc. v. FERC*, 564 F.3d 1342 (D.C. Cir. 2009).

real power capability verification.⁷ For MOD-025-1, the Commission directed NERC to clarify that MVAR capability verifications should be made at multiple points over a generator unit's operating range, and also directed NERC to clarify the time period within which reactive power capability verifications are to be provided.⁸

9. Two directives contained in Order No. 693 pertain to proposed Reliability Standard PRC-024-1. When discussing NERC's proposed TPL Reliability Standards, the Commission stated that NERC should use the Nuclear Regulatory Commission's (NRC) voltage ride through requirements when implementing Reliability Standards to "assure that there is consistency between the Reliability Standards and the NRC requirement that the system is accurately modeled."⁹ The Commission further directed NERC to explicitly require generators to be "capable of riding through the same set of Category B and C contingencies, as required by wind generators in Order No. 661, or that those generators that cannot ride through be simulated as tripping."¹⁰

II. NERC Petition and Proposed Reliability Standards

A. NERC Petition

10. On May 30, 2013, NERC filed a petition seeking approval of proposed Reliability Standards MOD-025-2, MOD-026-1, MOD-027-1, PRC-019-1 and PRC-024-1. Four of the five Reliability Standards are new, while existing Reliability Standards MOD-024-1

⁷ Order No. 693, FERC Stats. & Regs. ¶ 31,242 at PP 1310-1311.

⁸ *Id.* PP 1321-1323.

⁹ *Id.* P 1787.

¹⁰ *Id.*

and MOD-025-1 were merged into proposed Reliability Standard MOD-025-2. NERC also seeks approval of the associated implementation plans, violation risk factors and violation severity levels, and retirement of current Reliability Standards MOD-024-1 and MOD-025-1 at midnight of the day immediately prior to the effective date of MOD-025-2. NERC proposes to phase in effective dates in stages over periods ranging from five years (for MOD-025-2, PRC-019-1 and PRC-024-1) to ten years (for MOD-026-1 and MOD-027-1).¹¹ NERC states that “these five proposed Reliability Standards address generator verifications needed to support Bulk-Power System reliability and will ensure that accurate data is verified and made available for planning simulations.”¹²

11. NERC explains that Bulk-Power System reliability benefits from “good quality simulation models of power system equipment,” and that “model validation ensures the proper performance of the control systems and validates the computer models used for stability analysis.”¹³ NERC further states that the proposed Reliability Standards will enhance reliability because the tests performed to obtain model data may reveal latent defects that could cause “inappropriate unit response during system disturbances.”¹⁴ NERC also states that simulating the response of synchronous machines and related control systems in sufficient detail is essential for effective power system planning and

¹¹ NERC Petition, Exhibit B.

¹² NERC Petition at 2.

¹³ *Id.*

¹⁴ *Id.* at 2-3.

operational studies.¹⁵ For accurate simulations reflecting actual equipment performance covering a range of disturbances, NERC states that models must not only contain adequate information, they must also correspond to actual field values.¹⁶

B. Proposed Reliability Standards

1. Reliability Standard MOD-025-2

12. Proposed Reliability Standard MOD-025-2 merges two existing Reliability Standards, MOD-024-1 and MOD-25-1, and has the stated purpose of ensuring the accuracy of generator information related to gross and net real and reactive power capability and synchronous condenser reactive power capability that is available for planning models and bulk electric system reliability assessments.¹⁷ The proposed Reliability Standard applies to generator owners and transmission owners that own synchronous condensers, and has three requirements and two Attachments. Attachment 1, incorporated into Requirements R1.1, R2.1 and R3.1, specifies the periodicity for performing real and reactive power capability verification and the verification specifications for applicable facilities. Attachment 2, which generator owners and transmission owners will use to report to their transmission planners the information described in Attachment 1, is incorporated into Requirements R1.2, R2.2 and R3.2.

13. NERC states that proposed Reliability Standard MOD-025-2 addresses the directives the Commission issued in Order No. 693. Specifically, NERC states:

¹⁵ *Id.* at 3.

¹⁶ *Id.*

¹⁷ Reliability Standard MOD-025-2, Section A.3 (Purpose).

(1) Requirement R1, Part 1.2 specifies that a generator owner must submit Attachment 2 or another form containing the same information to its transmission planner within 90 calendar days of either the date the data is recorded for a staged test or the date the data is selected for verification using historical operational data; (2) Requirement R1, Part 1.1 requires a generator owner to verify the real power capability of its generating units as set forth in Attachment 1, including the consideration of ambient conditions during the verification period; and (3) Attachment 1, Sections 2.1 through 2.4, requires reactive power capability verification at multiple points across a unit's operating range.¹⁸

2. Reliability Standard MOD-026-1

14. Proposed Reliability Standard MOD-026-1, which is applicable to generator owners and transmission planners, is a new Reliability Standard that has six requirements and an Attachment describing the periodicity for excitation control system or plant volt/var function model verification. NERC explains that the purpose of proposed Reliability Standard MOD-026-1 is to ensure that detailed modeling of generator excitation systems, essential for valid simulations in power system stability studies, will be conducted, and that those models accurately represent generator excitation control system or plant volt/var control function behavior for bulk electric system reliability assessments.¹⁹ Requirement R1 requires transmission planners to provide generator owners with specified information within 90 days of a written request, including

¹⁸ NERC Petition at 10-12.

¹⁹ *Id.* at 14-16.

instructions on how to obtain models, block diagrams and/or data sheets and model data for any of the generator owner's existing applicable unit specific excitation control system or plant volt/var control function contained in the transmission planner's dynamic database from the current (in-use) models. NERC explains that Requirement R1 ensures that the transmission planner provides necessary information to the generator owners so that they can provide a useable model in an acceptable format. This further ensures that generator owners can comply with Requirement R2 by providing relevant information to transmission planners.²⁰

15. Requirement R2 requires each generator owner to provide its transmission planner with a verified generator excitation control system or plant volt/var control function model that includes the data and documentation specified in Requirement R2, Part 2.1. The periodicity for this requirement is set forth in Attachment 1. The purpose of Requirement R2 is to verify that the generator excitation control system or plant volt/var control function model and the model parameters used in dynamic simulations performed by the transmission planner accurately represent the generator excitation control system or plant volt/var control function behavior when assessing bulk electric system reliability.²¹ Requirement R3 requires generator owners to provide written responses to transmission planner requests within 90 days regarding unusable models, technical concerns and transmission planner determinations that simulated excitation control

²⁰ *Id.* at 15.

²¹ *Id.* at 16.

system or plant volt/var control function model responses do not match a recorded response to a transmission system event. NERC explains that Requirement R3 of proposed Reliability Standard MOD-026-1 “provides response requirements for a Generator Owner when it receives certain requests from the Transmission Planner. This communication ensures that Generator Owners have an obligation to respond in a timely fashion when there are demonstrated problems with a model that was provided by the Generator Owner in accordance with Requirement R2.”²² Under Requirement R4, generator owners are required to determine whether changes to applicable units affect models provided pursuant to Requirement R2, and to provide the transmission planner with revised model data or plans to perform model verification.

16. Requirement R5 requires a generator owner to respond within 90 days to a “technically justified unit request” from its transmission planner to perform a model review of a unit or plant, including details for model verification or corrected model data. A footnote to Requirement R5 states that “Technical justification is achieved by the Transmission Planner demonstrating that the simulated unit or plant response does not match the measured unit or plant response.” Also, Applicability section 4.2.4 in MOD-026-1 states that facilities to which the standard applies include “For all Interconnections: A technically justified unit that meets NERC registry criteria but is not otherwise included in the above Applicability sections 4.2.1, 4.2.2, or 4.2.3 and is requested by the Transmission Planner.”

17. NERC explains that Requirement R5 allows transmission planners to request that

²² *Id.* at 17.

generator owners who otherwise are not covered by the Applicability section (i.e., whose MVA ratings are lower than the applicability thresholds specified in Section 4 of proposed Reliability Standard MOD-026-1 but meet or exceed the Registry Criteria) to provide model verifications or to correct model data.²³ Requirement R6 requires transmission planners to provide written responses to generator owners within 90 days of receiving a verified excitation control system or plant volt/var control function model information whether the model is usable or not in accordance with Requirement R2. If it determines the model to be unusable, the transmission planner must explain the technical basis for that decision.

3. Reliability Standard MOD-027-1

18. The stated purpose of proposed Reliability Standard MOD-027-1, which is new and contains five Requirements and an Attachment, is to verify that the turbine/governor and load control or active power/frequency control model and the model parameters, used in dynamic simulations that assess bulk electric system reliability, accurately represent generator unit real power response to system frequency variations.²⁴ Requirement R1 requires transmission planners to provide generator owners with guidance that will enable generator owners to provide the information required in Requirements R2 and R4 within 90 days of a written request. Requirement R2 requires generator owners to provide transmission planners with a verified turbine/governor and load control or active

²³ *Id.* at 18.

²⁴ Reliability Standard MOD-27-1, Section A.3 (Purpose).

power/frequency control model for each applicable unit, including documentation and data in accordance with the periodicity specified in MOD-027-1 Attachment 1.

Attachment 1 (Turbine/Governor and Load Control or Active Power/Frequency Control Model Periodicity) also contains a table listing verification conditions and related actions required of generator owners.²⁵

19. Requirement R3 establishes communication requirements to ensure that generator owners respond to transmission planner determinations that a generator owner's model is not "usable," or where there is a difference between the model and three or more actual transmission system events.²⁶ Requirement R4 requires generator owners to provide transmission planners with updates when changes occur to the turbine/governor and load control or active power/frequency control system that alter equipment response characteristics.²⁷ Requirement R5 requires transmission planners to inform generator owners within 90 days of receiving model information (in accordance with Requirement R2) whether the model is usable or not. If a model is unusable, the transmission planner shall provide the generator owner with an explanation of the technical basis for that decision. Also, Requirement R3 requires generator owners to provide a written response within 90 days.²⁸

²⁵ NERC Petition at 20.

²⁶ *Id.* at 21.

²⁷ *Id.* at 22.

²⁸ *Id.*

4. Proposed Reliability Standard PRC-019-1

20. Proposed Reliability Standard PRC-019-1 is new and contains two requirements intended to ensure that both generator owners and transmission owners verify coordination of generating unit facility or synchronous condenser voltage regulating controls, limit functions, equipment capabilities and protection system settings.²⁹ Requirement R1 requires generator owners and transmission owners to coordinate the voltage regulating system controls with the equipment capabilities and settings of the applicable protection system devices and functions.³⁰ Requirement R2 requires generator owners and transmission owners to perform the coordination described in Requirement R1 to address equipment or setting changes.³¹ The coordination required in proposed Reliability Standard PRC-019-1 must be performed at least every five years.

5. Proposed Reliability Standard PRC-024-1

21. Proposed Reliability Standard PRC-024-1 is new and consists of four Requirements and two Attachments. The stated purpose of PRC-024-1 is to ensure that generator owners set their generator protective relays such that generating units remain connected during defined frequency and voltage excursions.³² Requirement R1 requires generator owners having generator frequency protective relaying activated to trip their generating units to set their protective relaying to prevent their generating units from

²⁹ Reliability Standard PRC-019-1, Section A.3 (Purpose).

³⁰ NERC Petition at 23.

³¹ *Id.* at 24.

³² Reliability Standard PRC-024-1, Section A.3 (Purpose).

tripping within the “no trip zone” of PRC-024-1 Attachment 1 (unless one of three specified exceptions applies). NERC explains that Attachment 1 contains tables with curve data points for each Interconnection indicating the amount of time a generator needs to remain connected at specific defined frequency excursions.³³ Requirement R2 addresses voltage excursions, requiring, subject to four exceptions, generator owners to ensure that their voltage protective relaying settings prevent their generating units from tripping within the “no trip zone” described in PRC-024-1, Attachment 2.

22. NERC states that the standard drafting team believes the voltage profile contained in Attachment 2 includes excursions that would be expected under Category B and C contingencies. Therefore, NERC asserts that by ensuring that generator units remain connected to the grid during voltage excursions, Requirement R2 and Attachment 2 satisfy the Commission directive issued in Order No. 693 to “explicitly require either that all generators are capable of riding through the same set of Category B and C contingencies, as required by wind generators in Order No. 661, or that those generators that cannot ride through be simulated as tripping.”³⁴

23. Requirement R3 of proposed Reliability Standard PRC-024-1 requires generator owners to document regulatory or equipment limitations that would prevent them from satisfying the relay setting criteria in Requirements R1 and R2. Generator owners must inform their planning coordinator and transmission planner of such limitations within 30

³³ NERC Petition at 25.

³⁴ *Id.* at 29 (citing Order No. 693, FERC Stats. & Regs. ¶ 31,242 at P 1787).

calendar days. According to NERC, the standard drafting team believes that “regulatory limitations” include NRC requirements and, therefore, Requirement R3 satisfies the Commission’s guidance that “NRC requirements should be used when implementing the Reliability Standards.”³⁵

24. Requirement R4 requires generator owners to provide their planning coordinator or transmission planner with generator protection trip settings associated with Requirements R1 and R2 within 60 days of either a written request or a change to previously requested trip settings.³⁶

III. Discussion

25. Pursuant to section 215(d) of the FPA, the Commission proposes to approve proposed Reliability Standards MOD-025-2, MOD-026-1, MOD-027-1, PRC-019-1 and PRC-024-1, including the associated implementation plan and proposed violation risk factors and violations severity levels, as just, reasonable, not unduly discriminatory or preferential, and in the public interest. The proposed Reliability Standards help ensure that verified data is available for power system planning and operational studies by requiring the verification of generator equipment needed to support Bulk-Power System reliability and enhance coordination of important protection system settings. Also, proposed Reliability Standards MOD-025-2 and PRC-024-1 satisfy relevant outstanding directives set forth in Order No. 693. We also propose to approve the retirement of the

³⁵ *Id.* at 27-28 (citing Order No. 693, FERC Stats. & Regs. ¶ 31,242 at P 1787).

³⁶ *Id.* at 31.

currently-effective standards MOD-024-1 and MOD-025-1 prior to the effective date of MOD-025-2.

26. While we propose to approve the proposed Reliability Standards, we seek comment on certain aspects of proposed Reliability Standards MOD-026-1 and MOD-027-1. Specifically, we discuss the following issues below: (A) the higher Megavolt Amperes (MVA) applicability threshold for proposed Reliability Standards MOD-026-1 and MOD-027-1; (B) the process for determining when it is “technically justified” for a transmission planner to require a generator owner to provide model reviews under MOD-026-1; (C) why the “technically justified” provision is not also included in MOD-027-1; and (D) assignment of violation of severity levels.

A. Higher MVA Applicability Threshold in MOD-026-1 and MOD-027-1

27. The applicability thresholds in proposed Reliability Standards MOD-026-1 and MOD-027-1 are higher than for the other three proposed Reliability Standards, and could exclude approximately 20 percent of generators from compliance.³⁷ In contrast to the greater than 20 MVA applicability thresholds set forth in the other three proposed Reliability Standards in NERC’s petition,³⁸ MOD-026-1 and MOD-027-1 would exclude units rated below 100 MVA (Eastern and Quebec Interconnection), 75 MVA (Western

³⁷ See NERC Petition, Exhibit E (Summary of the Reliability Standard Development Proceeding and Complete Record of Development of Proposed Reliability Standard) section entitled “Consideration of Comments on Draft Standard” at 91 indicating that the threshold in the proposed standard would limit applicability of the standard to 80 percent of installed MVA on an Interconnection basis.

³⁸ Reliability Standard MOD-025-2, Section 4.2 (Facilities); Reliability Standard PRC-019-1, Section 4.2 (Facilities); and Reliability Standard PRC-024-1, Section 4 (Applicability).

Interconnection) and 50 MVA (ERCOT Interconnection).³⁹

28. During the standard development process, several industry stakeholders commented that the standard drafting team should ensure that the applicability thresholds of MOD-026-1 and MOD-027-1 be aligned with the other three proposed Reliability Standards. In response, the standard drafting team stated that “verification of excitation system is expensive both from a monetary and human resource viewpoint. Therefore, the [standard drafting team] believes that these applicability thresholds will result in substantial accuracy improvements to the excitation models and associated Reliability Standards, while not unduly mandating costly and time-consuming verification efforts.”⁴⁰ We seek comment as to whether excluding approximately 20 percent of generators from the applicability of MOD-026-1 and MOD-027-1, especially in areas with a high concentration of generators falling below the thresholds, would (a) limit the effectiveness of proposed Reliability Standards MOD-026-1 and MOD-027-1 or (b) adversely impact transmission planners’ ability to reduce risk to Bulk Power System reliability.

B. Process for Identifying “Technically Justified” Generating Units in MOD-026-1

29. Proposed Reliability Standard MOD-026-1 applies to generating units that are connected to the bulk electric system when “technically justified.” Specifically,

³⁹ Reliability Standard MOD-026-1, Section 4.2 (Facilities); Reliability Standard MOD-027-1, Section 4.2 (Facilities).

⁴⁰ NERC Petition, Exhibit E (Summary of the Reliability Standard Development Proceeding and Complete Record of Development of Proposed Reliability Standard) section entitled “Consideration of Comments on Draft Standard” at 91.

Applicability Section 4.2.4 allows a transmission planner to compel a generator owner to provide model reviews and related information in accordance with Requirement R5 if the transmission planner's unit simulations do not match the generator owner's measured unit data. Under such circumstances, generator owners with "technically justified" units must comply with proposed Reliability Standard MOD-026-1, even though the unit MVA rating is below the stated MVA threshold for applicability.

30. While we agree with the intent of this section, the means by which transmission planners would become aware of discrepancies between simulated units and measured units, which forms the basis for "technically justified" determinations, is unclear. The technical justification, or discrepancies between simulated units and measured units, suggests that there should be some benchmark available in the process by which transmission planners identify generator owners for compliance with MOD-026-1. The Final Report on the August 2003 blackout stated that "the regional councils are to establish and begin implementing criteria and procedures for validating data used in power flow models and dynamic simulations by benchmarking model data with actual system performance."⁴¹ The Commission seeks comment from NERC and other interested parties as to whether the means or process for transmission planners to

⁴¹ U.S.-Canada Power System Outage Task Force (Task Force), Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations (April 2004) (Final Blackout Report), Recommendation 24. The Final Blackout Report is available on the Internet at <http://www.ferc.gov/industries/electric/indus-act/blackout.asp>.

determine whether a generator owner's unit is "technically justified" is sufficiently clear and workable. We further seek comment as to whether additional details regarding how the process will be implemented should be included in an attachment to the proposed Reliability Standard.

C. Should Proposed Reliability Standard MOD-027-1 Include the "Technically Justified" Provision

31. Proposed Reliability Standard MOD-027-1 does not contain a provision analogous to section 4.2.4 of MOD-026-1, whereby a transmission planner may determine whether to subject a generator owner with units falling below the stated applicability threshold to the Requirements in proposed Reliability Standard MOD-026-1. We seek comment as to whether the technical justification provision should also be included in proposed Reliability Standard MOD-027-1 to provide an opportunity for transmission planners to address discrepancies between unit simulations and generator owners' measured unit data.

D. Violation Severity Levels

1. VSL for MOD-026-1, Requirement R6 and MOD-027-1, Requirement R5

32. For Requirement R6 of MOD-026-1 and Requirement R5 of MOD-027-1, NERC proposes a "severe" violation severity level when a transmission planner's written response that a Generation Owner's verified model is useable "omitted confirmation for all specified model criteria" in the requirement. NERC does not propose any violation severity level for a violation of the last sentence of these requirements: "If the model is not useable, the [transmission planner] shall provide a technical description of why the

model is not useable.” Compliance with this sentence is equally important as compliance with the other obligations of these Requirements. Lack of a violation severity level for this type of violation is inconsistent with our VSL Guideline 3 because the proposed violation severity levels do not address all obligations in these Requirements. We propose to direct that NERC submit a violation severity level that addresses a violation of the last sentence of Requirement R6 of MOD-026-1 and Requirement R5 of MOD-027-1.

2. VSL for PRC-024-1, Requirements R1 and R2

33. NERC proposes to assign a “severe” violation severity level for a violation of Requirements R1 and R2 of PRC-024-1 when a generator owner fails to set its generator frequency or voltage protective relays so that they do not trip within the criteria listed within Requirements R1 and R2 unless there is a documented and communicated regulatory or equipment limitation per Requirement R3. We observe that Requirements R1 and R2 of PRC-024-1 include three and four bulleted exceptions, respectively, to the requirement that the generator frequency or voltage protective relays not trip applicable generating unit(s) within the “no-trip zone” of Attachment 1 or 2 to that standard. For Requirements R1 and R2, only the third and fourth exception, respectively, relate to a regulatory or equipment limitation in accordance with Requirement R3. As a result, the wording of the violation severity level for Requirements R1 and R2 could be read to mean that a generator owner that set generator frequency or voltage protective relaying to trip within the “no-trip zone” based on either the first or second exception in Requirement R1 and either the first, second or third exception in R2, violated that Requirement with a severe violation severity level. To avoid that interpretation, NERC should confirm in its

comments that a generator owner will not violate Requirement R1 or R2 if it sets generator frequency or voltage protective relaying to trip within the “no-trip zone” based upon the exceptions for Requirements R1 and R2.

IV. Information Collection Statement

34. The following collection of information contained in the Proposed Rule is subject to review by the Office of Management and Budget (OMB) under section 3507(d) of the Paperwork Reduction Act of 1995 (PRA).⁴² OMB’s regulations require that OMB approve certain reporting and recordkeeping requirements (collections of information) imposed by an agency.⁴³ Upon approval of a collection of information, OMB will assign an OMB control number and expiration date. Respondents subject to the filing or recordkeeping requirements 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.

35. The Commission will submit 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 the provided burden estimate, ways to enhance the quality, utility, and clarity of the information to be collected, and any suggested methods for minimizing the respondents’ burden, including the use of automated information

⁴² 44 U.S.C. 3507(d) (2006).

⁴³ 5 CFR 1320.11 (2013).

techniques.

36. This Notice of Proposed Rulemaking proposes to approve five proposed Reliability Standards: MOD-025-2, MOD-026-1, MOD-027-1, PRC-019-1 and PRC-024-1. Proposed Reliability Standard MOD-025-2 would replace currently effective Reliability Standards MOD-024-1 and MOD-025-1. In Order No. 693, the Commission did not approve or remand MOD-024-1 and MOD-025-1, as they were identified as “fill-in-the-blank” Reliability Standards for which NERC had not submitted regional procedures.

37. Public Reporting Burden: The burden and cost estimates below are based on the increase in the reporting and recordkeeping burden imposed by the proposed Reliability Standards. Our estimate of the number of respondents affected is based on the NERC Compliance Registry as of July 30, 2013.⁴⁴ According to the Compliance Registry, NERC has registered 901 generator owners within the United States. Currently, synchronous condensers are not included in the NERC Compliance Registry, and the standard drafting team stated that the number of transmission owners who own synchronous condensers is extremely low. We seek NERC and industry comment regarding the number of synchronous condensers currently in use (including confidential data, if necessary).

38. The burden estimates reflect the standards and the number of affected entities

⁴⁴ NERC Compliance Registry (July 30, 2013), *available at* http://www.nerc.com/pa/comp/Registration%20and%20Certification%20DL/NERC_Co_mpliance_Registry_Matrix_Summary20130730.pdf.

(e.g., the generator owner's one-time burden to develop testing procedures, verification process, and process for collection of data). Estimates for the additional burden imposed by the NOPR, if approved as a final rule in RM13-16, follow.

| PRC-019-1 (Coordination of Generating Unit or Plant Capabilities, Voltage Regulating Controls, and Protection) | | | | | |
|---|---|---|--|--|---------------------------------------|
| FERC-725G | Number of Respondents⁴⁵ (1) | Number of Responses per Respondent (2) | Average Burden Hours Per Response (3) | Total Annual Burden Hours (1)x(2)x(3) | Total Annual Cost⁴⁶ |
| Develop coordination and relay settings procedures | 738 GO | 1 | 8 | 5,904 | \$307,008 one-time (\$52/hr) |
| Relay Settings | 738 GO | 1 | 8 | 5,904 | \$413,280 (\$70/hr) |
| Evidence Retention ⁴⁶ | 738 GO | 1 | 1 | 738 | \$20,664 (\$28/hr) |
| TOTAL | | | | 12,546 | \$740,952 |

⁴⁵ GO = Generator Owner, TP = Transmission Planner.

Assuming 10 generators per generator owner, using EIA-860 2012 generator data (<http://www.eia.gov/electricity/data/eia860/>) total number of units > 20 MW are 7,379, which results in 738 generator owners.

⁴⁶ The estimates for cost per hour are derived as follows:

- \$52/hour, the average of the salary plus benefits for an engineer, from Bureau of Labor and Statistics at http://bls.gov/oes/current/naics3_221000.htm
- \$70/hour, the average of the salary plus benefits for a manager and an engineer, from Bureau of Labor and Statistics at http://bls.gov/oes/current/naics3_221000.htm
- \$28/hour, based on a Commission staff study of record retention burden cost.

| PRC-024-1 (Generator Frequency and Voltage Protective Relay Settings) | | | | | |
|--|---|---|--|--|---------------------------------------|
| FERC-725G | Number of Respondents⁴⁵ (1) | Number of Responses per Respondent (2) | Average Burden Hours Per Response (3) | Total Annual Burden Hours (1)x(2)x(3) | Total Annual Cost⁴⁶ |
| Develop coordination and relay settings procedures | 738 GO | 1 | 8 | 5,904 | \$307,008 one-time (\$52/hr) |
| Relay Settings | 738 GO | 1 | 8 | 5,904 | \$413,280 (\$70/hr) |
| Evidence Retention ⁴⁶ | 738 GO | 1 | 1 | 738 | \$20,664 (\$28/hr) |
| TOTAL | | | | 12,546 | \$740,952 |

| MOD-025-2 (Verification and Data Reporting of Generator Real and Reactive Power Capability and Synchronous Condenser Reactive Power Capability) | | | | | |
|--|---|---|--|--|---------------------------------------|
| FERC-725L | Number of Respondents⁴⁵ (1) | Number of Responses per Respondent (2) | Average Burden Hours Per Response (3) | Total Annual Burden Hours (1)x(2)x(3) | Total Annual Cost⁴⁶ |
| Develop testing procedures, verification process, and process for collection of data | 738 GO | 1 | 8 | 5,904 (one-time) | \$307,008 one-time (\$52/hr) |
| Attachment 2 | 738 GO | 1 | 6 | 4,428 | \$309,960 (\$70/hr) |
| Evidence Retention ⁴⁶ | 738 GO | 1 | 1 | 738 | \$20,664 (\$28/hr) |
| TOTAL | | | | 11,070 | \$637,632 |

| MOD-026-1 (Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions) | | | | | |
|--|---|---|--|--|---------------------------------------|
| FERC-725L | Number of Respondents⁴⁵ (1) | Number of Responses per Respondent (2) | Average Burden Hours Per Response (3) | Total Annual Burden Hours (1)x(2)x(3) | Total Annual Cost⁴⁶ |
| Develop testing procedures, verification process, and process for collection of data | 356 GO | 1 | 8 | 2,848 (one-time) | \$148,096 one-time (\$52/hr) |
| Instructions for obtaining excitation control system or plant voltage/variance control function model | 187 TP | 1 | 8 | 1,496 | \$104,720 (\$70/hr) |
| Documentation on generator verification | 356 GO | 1 | 8 | 2,848 | \$199,360 (\$70/hr) |
| Evidence Retention ⁴⁶ | 543 GO and TP | 1 | 1 | 543 | \$15,204 (\$28/hr) |
| TOTAL | | | | 7,735 | \$467,380 |

| MOD-027-1 (Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions) | | | | | |
|--|---|---|--|--|---|
| FERC-725L | Number of Respondents⁴⁵ (1) | Number of Responses per Respondent (2) | Average Burden Hours Per Response (3) | Total Annual Burden Hours (1)x(2)x(3) | Total Annual Cost⁴⁶ |
| Develop testing procedures, verification process, and process for collection of data | 356 GO | 1 | 8 | 2,848 (one-time) | \$148,096 one-time (\$52/hr) |
| Instructions for obtaining turbine/governor and load control or active power/frequency control model | 187 TP | 1 | 8 | 1,496 | \$104,720 (\$70/hr) |
| Documentation on generator verification | 356 GO | 1 | 8 | 2,848 | \$199,360 (\$70/hr) |
| Evidence Retention ⁴⁶ | 543 GO and TP | 1 | 1 | 543 | \$15,204 (\$28/hr) |
| TOTAL | | | | 7,735 | \$467,380 |
| TOTAL for RM13-16 | | | | | \$3,054,296 (\$1,837,080 without one-time costs) |

Docket No. RM13-16-000

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Title: Mandatory Reliability Standards for the Bulk-Power System

Action: Proposed revisions to FERC-725A.

OMB Control No: 1902-0244

Respondents: Businesses or other for-profit institutions; not-for-profit institutions.

Frequency of Responses: One-time, every five years, and every ten years.

Necessity of the Information: The proposed approval of the five Reliability Standards noted above implements the Congressional mandate of the Energy Policy Act of 2005 to develop mandatory and enforceable Reliability Standards to better ensure the reliability of the nation's Bulk-Power System.

Internal Review: The Commission has reviewed the proposed approval to the Reliability Standards and made a determination that its action is necessary to implement section 215 of the FPA. The Commission has assured itself, by means of its internal review, that there is specific, objective support for the burden estimate associated with the information requirements.

39. Interested persons may obtain information on the reporting requirements by contacting the following: 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].

40. For submitting comments concerning the collection of information and the associated burden estimates, please send your comments to the Commission, and to the Office of Management and Budget, Office of Information and Regulatory Affairs, Washington, DC 20503 [Attention: Desk Officer for the Federal Energy Regulatory

Commission, phone: (202) 395-4638, fax: (202) 395-7285]. For security reasons, comments to OMB should be submitted by e-mail to: oira_submission@omb.eop.gov. Comments submitted to OMB should include Docket Number RM13-16-000 and OMB Control Number 1902-0252 and 1902-0261.

V. Regulatory Flexibility Act Certification

41. The Regulatory Flexibility Act of 1980 (RFA)⁴⁷ generally requires a description and analysis of proposed 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 rule and that minimize any significant economic impact on a substantial number of small entities. The Small Business Administration's (SBA's) Office of Size Standards develops the numerical definition of a small business.⁴⁸ 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.⁴⁹

42. Proposed Reliability Standards MOD-025-2, MOD-026-1, MOD-027-1, PRC-019-1 and PRC-024-1, MOD-025-2 help ensure that generators remain in operation during specified voltage and frequency excursions, properly coordinate protective relays and generator voltage regulator controls, and ensure that generator models accurately reflect

⁴⁷ 5 U.S.C. 601-612 (2006).

⁴⁸ 13 CFR 121.101 (2013).

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

the generator's capabilities and equipment performance. Comparison of the NERC Compliance Registry with data submitted to the Energy Information Administration on Form EIA-861 indicates that, of the 901 generator owners in the United States registered by NERC, 49 qualify as small entities (5.4 percent) and of the 184 of the transmission planners in the United States registered by NERC, 42 qualify as small entities (22 percent). The Commission estimates that the small entities to whom the proposed Reliability Standards PRC-019-1, PRC-024-1 and MOD-025-1 applies will incur compliance⁵⁰ and record keeping costs⁵¹ of \$655,228 (\$13,372 per generator owner). For the proposed Reliability Standards MOD-026-1 and MOD-027-1, the Commission estimates that the small generator owner entities (22) will incur compliance and record keeping costs of \$83,072 (\$3,776 per generator owner). This will result in a total compliance and record-keeping cost for generator owners of \$686,870 (\$14,018 per entity). Additionally, small transmission planner entities (42) will incur compliance and record keeping costs⁵² of \$47,040 (\$1,120 per transmission planner).

43. The Commission does not consider the estimated costs per small entity to have a significant economic impact for a substantial number of small entities. Accordingly, the Commission certifies that this proposed rulemaking will not have a significant economic

⁵⁰ Assuming 50 hours per generator owner for relay settings/testing based on \$70/hour.

⁵¹ This cost came from the above PRC-019-1, PRC-024-1, and MOD-025-2 tables.

⁵² This cost came from the above MOD-026-1 and MOD-027-1 tables.

impact on a substantial number of small entities. The Commission seeks comment on this certification.

VI. Environmental Analysis

44. 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.⁵³ The Commission has categorically excluded certain actions from this requirement as not having a significant effect on the human environment. Included in the exclusion are rules that are clarifying, corrective, or procedural or that do not substantially change the effect of the regulations being amended.⁵⁴ The actions proposed here fall within this categorical exclusion in the Commission's regulations.

VII. Comment Procedures

45. 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 after publication in the FEDERAL REGISTER**]. Comments must refer to Docket No. RM13-16-000, and must include the commenter's name, the organization they represent, if applicable, and their address in their comments.

46. The Commission encourages comments to be filed electronically via the eFiling link on the Commission's web site at <http://www.ferc.gov>. The Commission accepts

⁵³ *Regulations Implementing the National Environmental Policy Act of 1969*, Order No. 486, FERC Stats. & Regs., Regulations Preambles 1986-1990 ¶ 30,783 (1987).

⁵⁴ 18 CFR 380.4(a)(2)(ii).

most standard word processing formats. Documents created electronically using word processing software should be filed in native applications or print-to-PDF format and not in a scanned format. Commenters filing electronically do not need to make a paper filing.

47. Commenters that are not able to file comments electronically must send original and 14 copies of their comments to: Federal Energy Regulatory Commission, Secretary of the Commission, 888 First Street NE, Washington, DC 20426.

48. 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

49. 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 the Commission's Home Page (<http://www.ferc.gov>) and in the Commission'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.

50. From the Commission'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.

51. User assistance is available for eLibrary and the Commission's web site during normal business hours from the Commission's 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 the direction of the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

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