

137 FERC ¶ 61,043  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;  
Philip D. Moeller, John R. Norris,  
and Cheryl A. LaFleur.

North American Electric Reliability Corporation

Docket No. RD11-8-000

ORDER APPROVING REGIONAL RELIABILITY STANDARD

(Issued October 20, 2011)

1. On May 31, 2011, the North American Electric Reliability Corporation (NERC), the Commission-certified Electric Reliability Organization (ERO), submitted a petition for Commission approval of the Northeast Power Coordinating Council's (NPCC) Protection and Control (PRC) regional Reliability Standard PRC-002-NPCC-01 (Disturbance Monitoring) and two associated new definitions. The regional Reliability Standard requires transmission owners and generator owners to provide recording capability necessary to monitor the response of the Bulk-Power System to system disturbances, including scheduled and unscheduled outages; requires each reliability coordinator to establish requirements for its area's dynamic disturbance recording needs; and establishes disturbance data reporting requirements.

2. In this order, we approve regional Reliability Standard PRC-002-NPCC-01, finding that it is just, reasonable, not unduly discriminatory or preferential, and in the public interest. Also, we approve NERC's requested implementation plan which provides staggered effective dates, i.e., the date on which applicable entities are subject to mandatory compliance, with full compliance required within four years of regulatory approval.

**I. Background**

3. Section 215 of the Federal Power Act (FPA) requires the ERO to develop mandatory and enforceable Reliability Standards, which provide for the reliable operation of the Bulk-Power System, subject to Commission review and approval.<sup>1</sup> Section 215(d)(2) of the FPA states that 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,

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<sup>1</sup> 16 U.S.C. § 824o(d) (2006).

and in the public interest. Once approved, the Reliability Standard may be enforced by the ERO, subject to Commission oversight, or by the Commission independently.<sup>2</sup>

4. Reliability Standards that the ERO proposes to the Commission may include Reliability Standards that are developed by a Regional Entity.<sup>3</sup> On April 19, 2007, the Commission approved delegation agreements between NERC and eight Regional Entities, including NPCC.<sup>4</sup> In the Delegation Agreement Order, the Commission accepted NPCC as a Regional Entity and accepted NPCC's Standards Development Manual, which sets forth the process for NPCC's development of regional Reliability Standards.<sup>5</sup> The NPCC region is a less than interconnection-wide region, and its standards apply only to that part of the Eastern Interconnection within the NPCC geographical footprint.

5. In Order No. 672, the Commission urged uniformity of Reliability Standards, but recognized a potential need for regional differences.<sup>6</sup> Accordingly, the Commission stated that:

As a general matter, we will accept the following two types of regional differences, provided they are otherwise just, reasonable, not unduly discriminatory or preferential and in the public interest, as required under the statute: (1) a regional difference that is more stringent than the continent-wide Reliability Standard, including a regional difference that addresses matters that the continent-wide Reliability Standard does not; and (2) a regional Reliability Standard that is necessitated by a physical difference in the Bulk-Power System.<sup>7</sup>

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<sup>2</sup> See 16 U.S.C. § 824o(e).

<sup>3</sup> *Id.* § 824o(e)(4).

<sup>4</sup> See *North American Electric Reliability Corp.*, 119 FERC ¶ 61,060, at P 316-350 (Delegation Agreement Order), *order on reh'g*, 120 FERC ¶ 61,260 (2007).

<sup>5</sup> *Id.* P 302.

<sup>6</sup> *Rules Concerning Certification of the Electric Reliability Organization; Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672, FERC Stats. & Regs. ¶ 31,204, at P 290, *order on reh'g*, Order No. 672-A, FERC Stats. & Regs. ¶ 31,212 (2006).

<sup>7</sup> Order No. 672, FERC Stats. & Regs. ¶ 31,204 at P 291.

6. On March 16, 2007, the Commission issued Order No. 693, approving 83 of the 107 Reliability Standards filed by the ERO.<sup>8</sup> In that order, the Commission determined that it would not take action on certain proposed Reliability Standards that required supplemental information from regional reliability organizations. Such Reliability Standards refer to regional criteria or procedures that had not been submitted to the Commission for approval and, as such, are referred to as “fill-in-the-blank” standards. Pending Reliability Standard PRC-002-1 (Define Regional Disturbance Monitoring and Reporting) is one such fill-in-the-blank standard and, therefore, is not enforceable. NERC’s continent-wide, fill-in-the-blank standard PRC-002-1 would require regional reliability organizations to establish: (i) installation requirements for sequence of event recording, fault recording, and dynamic disturbance recording, and (ii) reporting requirements for recorded disturbance data. Because PRC-002-1 is an unenforceable and unapproved fill-in-the-blank standard, NPCC’s proposed regional Reliability Standard PRC-002-NPCC-01 is intended to fill the reliability gap related to disturbance monitoring and reporting by establishing enforceable disturbance monitoring and reporting requirements for the NPCC region.

## **II. NERC Petition and Notice of Filing**

7. In its May 31, 2011 petition,<sup>9</sup> NERC requests Commission approval of proposed regional Reliability Standard PRC-002-NPCC-01 (Disturbance Monitoring) and two associated new definitions. NERC states that PRC-002-NPCC-01 is intended to ensure that adequate disturbance data is available to facilitate bulk electric system event analyses and thereby improve system reliability by promoting improved system design and operations.

8. The standard is applicable to transmission owners, generator owners, and reliability coordinators and contains 17 requirements that identify the proper locations for sequence of events recorders, fault recorders, and dynamic disturbance recorders within the NPCC region and specify the data to be captured and reported by this equipment.

9. Sequence of events recorders capture the sequences of events for monitored changes of state in equipment and protection systems occurring in substations, switchyards, or power plants. Requirement R1 requires that each transmission owner and

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<sup>8</sup> *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).

<sup>9</sup> *North American Electric Reliability Corp.*, May 31, 2011 Petition for Approval of Proposed NPCC Regional Reliability Standard PRC-002-NPCC-01 — Disturbance Monitoring (NERC Petition).

generator owner provide sequence of events recording capability at specified locations either through installation of sequence of events recorders or as part of another device such as a remote terminal unit or a generator plant digital (or distributed) control system.

10. Fault recorders capture and store power system waveforms that can be used to analyze transients and abnormalities in system frequency. Requirement R2 requires each transmission owner to provide fault recording capability for specified elements of the Bulk-Power System, and Requirement R3 requires that each transmission owner have fault recording capability that determines the “Current Zero Time” for loss of bulk electric system transmission elements. “Current Zero Time” is a new defined term used in PRC-002-NPCC-01 to mean the precise time of circuit interruption. It is defined as “the time of the final current zero on the last phase to interrupt.”

11. Requirement R4 requires each generator owner to provide fault recording capability for “Generating Plants” at and above 200 MVA and connected through a generator step-up transformer to a bulk electric system element, unless such recording capability is provided by the transmission owner. “Generating Plants” is a new term defined as “one or more generators at a single physical location whereby a single contingency can affect all the generators at that location.” The term appears in this Requirement and in Requirement R1’s description of where sequence of event recording capability is to be located. It is used to clarify that, for the sake of efficiency, one sequence of event recorder or a single fault recorder may be used where it will capture all the information from a single contingency affecting all the generators at a single location, and multiple recorders would be redundant.

12. Because certain data are necessary for post-event analysis, Requirement R5 requires each transmission owner and generator owner to record for faults sufficient electrical quantities for each monitored bulk electric system element to determine: (i) three phase-to-neutral voltages; (ii) three phase currents and neutral currents; (iii) polarizing currents and voltages, if used; (iv) frequency; and (v) real and reactive power. Requirement R6 sets out the recording specifications required of the fault recording equipment in order to ensure the monitored data is captured in sufficient detail for it to be meaningfully used in analyses.

13. Dynamic disturbance recorders monitor power system conditions when the system experiences dynamic events such as low frequency oscillations, or frequency or voltage excursions. Requirement R7 requires each reliability coordinator to establish dynamic disturbance recording needs for its area in accordance with specified recording requirements, and Requirement R8 requires that dynamic disturbance recorders function continuously. To capture system disturbance data with sufficient detail for use in post-event analyses, Requirement R9 specifies the minimal recording duration, sample rate and trigger events for dynamic disturbance recorders. Requirement R10 requires each reliability coordinator to establish requirements to ensure that certain specified data are monitored or derived where dynamic disturbance recorders are installed.

14. Requirement R11 requires each reliability coordinator to document additional settings and deviations from the required trigger settings described in Requirement R9 and the required list of monitored quantities described in Requirement R10 and to report these settings and deviations to the Regional Entity upon request. Requirement R12 requires each reliability coordinator to specify its dynamic disturbance recording requirements, including trigger settings, to transmission owners and generator owners.

15. Each transmission owner and generator owner that receives a request from its reliability coordinator to install a dynamic disturbance recorder is required, under Requirement R13, to acquire and install the recorder in accordance with an implementation schedule agreed to with the reliability coordinator. They also are required by Requirement R14 to establish a maintenance and testing program for their stand alone disturbance monitoring equipment (i.e., equipment whose only purpose is disturbance monitoring). The Requirement lists elements of such a program.

16. Requirement R15 requires that each reliability coordinator, transmission owner, and generator owner share data within 30 days upon request, and each generator owner must provide recorded disturbance data from disturbance monitoring equipment within 30 days of receipt of a request for information from NERC, the Regional Entity, the reliability coordinator, or transmission or generator owners within NPCC. Requirement R16 specifies the format requirements for data files. Requirement R17 requires each reliability coordinator, transmission owner and generator owner to maintain, record and provide to the Regional Entity, upon request, specified data regarding the disturbance monitoring equipment installed to meet regional Reliability Standard PRC-002-NPCC-01.

17. Notice of NERC's filing was published in the *Federal Register*, 76 Fed. Reg. 40,350 (2011), with interventions and protests due on or before August 1, 2011. No motion to intervene or protest was received.

### **III. Discussion**

18. The Commission approves regional Reliability Standard PRC-002-NPCC-01 as just, reasonable, not unduly discriminatory or preferential, and in the public interest. To that end, the Commission finds that PRC-002-NPCC-01 satisfies the Order No. 672 factors on how the Commission determines whether a regional Reliability Standard is just and reasonable in that PRC-002-NPCC-01: (1) is clear and unambiguous regarding what is required and who is required to comply (transmission owners, generator owners, and reliability coordinators within the NPCC region); (2) has clear and objective measures for compliance and achieves a reliability goal (namely, ensuring that adequate disturbance data is available to facilitate bulk electric system event analyses); and (3) is "more stringent" than NERC's existing unapproved and unenforceable continent-wide disturbance monitoring and reporting standard, PRC-002-1.

19. Regional Reliability Standard PRC-002-NPCC-01 includes two new defined terms that apply only to the NPCC region: “Current Zero Time” and “Generating Plant.” The two proposed regional terms do not conflict with any existing terms in the NERC Glossary of Terms. Accordingly, the Commission approves the inclusion of the two regional terms related to PRC-002-NPCC-01 in the NERC Glossary specifically as NPCC regional terms.

20. The Commission finds that the NERC’s violation risk factors and violation severity levels for regional Reliability Standard PRC-002-NPCC-01 are consistent with the Commission’s established guidelines.<sup>10</sup> We therefore approve the assigned violation risk factors and violation severity levels.

21. As requested by NERC, the Commission approves the implementation plan for regional Reliability Standard PRC-002-NPCC-01.

#### **IV. Information Collection Statement**

22. The Office of Management and Budget (OMB) regulations require approval of certain information collection requirements imposed by agency actions.<sup>11</sup> Upon approval of a collection of information, OMB will assign an OMB control number and expiration date. Respondents subject to the filing requirement of this order 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)<sup>12</sup> 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.<sup>13</sup>

23. The Commission will submit these reporting and recordkeeping requirements to OMB for its review and approval under section 3507(d) of the PRA.<sup>14</sup> Comments are

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<sup>10</sup> See *North American Electric Reliability Corp.*, 119 FERC ¶ 61,145, *order on reh’g*, 120 FERC ¶ 61,145, at P 8-13 (2007); *North American Electric Reliability Corp.*, 123 FERC ¶ 61,284, at P 20-35, *order on reh’g & compliance*, 125 FERC ¶ 61,212 (2008); *North American Electric Reliability Corp.*, 135 FERC ¶ 61,166 (2011).

<sup>11</sup> 5 C.F.R. § 1320.10.

<sup>12</sup> 44 U.S.C. § 3501-20.

<sup>13</sup> 44 U.S.C. 3502(3)(A)(i), 44 U.S.C. § 3507(a)(3).

<sup>14</sup> 44 U.S.C. 3507(d).

solicited within sixty days of the date this order is published in the *Federal Register* 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 for minimizing the respondent's burden, including the use of automated information techniques. Comments should be submitted following the Commission's submission guidelines at <http://www.ferc.gov/help/submission-guide.asp> and should reference Docket No. RD11-8-000.

24. This Order approves regional Reliability Standard PRC-002-NPCC-01 (Disturbance Monitoring) which introduces new mandatory and enforceable requirements for the applicable entities. It generally identifies the evidence that will be used to monitor compliance. NPCC presently has criteria addressing monitoring equipment and published guidance addressing maintenance and testing of such equipment. The Disturbance Monitoring Equipment Criteria<sup>15</sup> seek the same or equivalent information identified in Reliability Standard PRC-002-NPCC-01, and NPCC's guidance establishes maintenance and testing expectations similar to those imposed by the regional Reliability Standard.<sup>16</sup> Thus, it is currently usual and customary for affected entities within NPCC to create, maintain and store some of the same or equivalent information identified in Reliability Standard PRC-002-NPCC-01. Therefore, many of the requirements contained in PRC-002-NPCC-01 do not impose new burdens on the affected entities.<sup>17</sup>

25. Several requirements contained in regional Reliability Standard PRC-002-NPCC-01 do introduce entirely new responsibilities for the applicable entities. Each such requirement is discussed below. Requirement R13 requires that each transmission owner and generator owner retain evidence that it acquired and installed dynamic disturbance recorders in accordance with the specifications requested by the reliability coordinator, and that the generator owner, transmission owner, and reliability coordinator retain evidence that they agreed on an implementation schedule. Requirement R14 requires that each transmission owner and generator owner establish a maintenance and testing program for stand-alone disturbance monitoring equipment. Sub-requirements 14.5 specifies that the program must require active analog quantities to be verified monthly, and Sub-requirement 14.7 requires that if failed units cannot be returned to service within

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<sup>15</sup> Disturbance Monitoring Equipment Criteria (Aug. 2007), *available at* <https://www.npcc.org/Standards/Criteria/A-15.pdf> (Disturbance Monitoring Criteria).

<sup>16</sup> Guide for Application of Disturbance Recording Equipment (Sept. 2006), *available at* <https://www.npcc.org/Standards/Guides/B-26.pdf> (Application Guide).

<sup>17</sup> 5 C.F.R. § 1320.3(b)(2) (2011).

90 days, the owner must record its efforts to restore the equipment to service. These components of the program have not been included in NPCC’s current Disturbance Monitoring Criteria or Application Guide. Requirement R17 requires each reliability coordinator, transmission owner, and generator owner to maintain and record specific data on installed disturbance monitoring equipment, and submit the data to the Regional Entity upon request. Under the Disturbance Monitoring Criteria, the reliability coordinator was not obligated to maintain these records or provide the records to the Regional Entity.

26. Public Reporting Burden: The estimate below regarding the number of respondents is based on the NERC compliance registry as of August 29, 2011. According to the NERC compliance registry, there are 35 transmission owners, 136 generation owners, and five reliability coordinators in the NPCC region. 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 167 entities registered as a transmission owner, generation owner, or reliability coordinator. This includes eight entities registered as both a generation owner and transmission owner, as well as one entity registered as both a transmission owner and a reliability coordinator.

27. We estimate that annually, approximately one entity within NPCC will have to procure dynamic disturbance recording capability. Based on Commission staff outreach and analysis, we estimate the total acquisition and installation cost will range between \$150,000 and \$750,000. We also estimate that an entity will experience a unit failure greater than 90 days once every five years. Therefore, 20 percent of NPCC’s 163 generator owners and transmission owners will experience a unit failure of this duration each year. The estimated burden for the requirements in this Order follow:

PRC-002-NPCC-01	Number of Respondents Annually (1)	Number of Responses Per Respondent (2)	Average Burden Hours Per Response (3)	Total Annual Hours (1x2x3)
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R13: GO <sup>18</sup> and TO to document acquisition and installation of dynamic disturbance recorders. GO, TO, and RC to develop and employ implementation schedule	1	1	<i>Record Retention</i>	10	10
R14.5: GO and TO maintenance and testing program for stand-alone disturbance monitoring equipment includes monthly verification of active analog quantities	163	12	<i>Record Retention</i>	5	9,780
R14.7: GO and TO requirement to return failed units to service in 90 days. Record kept of efforts if greater than 90 days	33	1	<i>Reporting (assessment and dist. of records)</i>	10	330
			<i>Record Retention</i>	10	330
R17: RC maintains data on equipment, and provide to RE upon request	5	1	<i>Reporting (assessment and dist. of data)</i>	5	25
			<i>Record Retention</i>	10	50
<b>Total</b>			<b><i>Reporting (assessment and dist)</i></b>		<b>355</b>
			<b><i>Record Retention</i></b>		<b>10,170</b>

<sup>18</sup> For purposes of this chart, generation owner is abbreviated to GO, transmission owner is abbreviated to TO, and reliability coordinator is abbreviated to RC.

Information Collection Costs: The Commission seeks comments on the costs to comply with these requirements and recordkeeping burden associated with regional Reliability Standard PRC-002-NPCC-01.

- Total Annual Hours for Collection: (Reporting and Record Retention) = 10,525 hours.
- Total Estimated Annual Record Retention Cost<sup>19</sup> = 10,170 hours @ \$28/hour = \$ 284,360
- Total Estimated Annual Reporting Cost = 355 hours @ \$120/hour = \$ 42,600
- Total Estimated Annual Compliance Cost (acquisition and installation of dynamic disturbance recorders) = \$750,000
- Total Estimated Annual Cost = \$1,077,640
- Title: NPCC Regional Reliability Standards
- Action: Proposed Collection FERC-725I.
- OMB Control No: To be determined.
- 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 new regional Reliability Standard that requires entities within the NPCC region to identify the proper locations for sequence of events recorders, fault recorders, and dynamic disturbance recorders and specify the data to be captured and reported by this equipment.
- Internal review: The Commission has reviewed the requirements pertaining to the proposed regional Reliability Standard 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.

28. 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].

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<sup>19</sup> 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.

The Commission orders:

Regional Reliability Standard PRC-002-NPCC-01, its assigned VRFs and VSLs, inclusion of the terms “Current Zero Time” and “Generating Plant” in the NERC Glossary of Terms Used in Reliability Standards, and the implementation plan proposed by NERC are hereby approved, as discussed in this order.

By the Commission. Commissioner Spitzer is not participating.

( S E A L )

Kimberly D. Bose,  
Secretary.