

148 FERC ¶ 61,042  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

18 CFR Part 40

[Docket Nos. RM13-19-000 and RM14-3-000; Order No. 799]

Generator Relay Loadability and  
Revised Transmission Relay Loadability Reliability Standards

(Issued July 17, 2014)

AGENCY: Federal Energy Regulatory Commission.

ACTION: Final rule.

SUMMARY: Pursuant to the section regarding Electric Reliability of the Federal Power Act, the Commission approves a new Reliability Standard, PRC-025-1 (Generator Relay Loadability), submitted by the North American Electric Reliability Corporation (NERC), the Commission-approved Electric Reliability Organization. In addition, the Commission approves Reliability Standard PRC-023-3 (Transmission Relay Loadability), also submitted by NERC, which revises a currently-effective standard pertaining to transmission relay loadability.

DATES: Effective Date: This rule will become effective **[INSERT DATE 60 days after publication in the FEDERAL REGISTER]**.

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SUPPLEMENTARY INFORMATION:

148 FERC ¶ 61,042  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Cheryl A. LaFleur, Acting Chairman;  
Philip D. Moeller, John R. Norris,  
and Tony Clark.

Generator Relay Loadability and  
Revised Transmission Relay Loadability  
Reliability Standards

Docket Nos. RM13-19-000  
RM14-3-000

ORDER NO. 799

FINAL RULE

(Issued July 17, 2014)

1. Pursuant to section 215 of the Federal Power Act (FPA),<sup>1</sup> the Commission approves a new Reliability Standard, PRC-025-1 (Generator Relay Loadability), submitted by the North American Electric Reliability Corporation (NERC). In addition, the Commission approves Reliability Standard PRC-023-3 (Transmission Relay Loadability), also submitted by NERC, which revises a currently-effective standard pertaining to transmission relay loadability.
2. NERC developed proposed Reliability Standard PRC-025-1 in response to certain Commission directives issued in Order No. 733,<sup>2</sup> in which the Commission approved an

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<sup>1</sup> 16 U.S.C. § 824o (2012).

<sup>2</sup> *Transmission Relay Loadability Reliability Standard*, Order No. 733, 130 FERC ¶ 61,221 (2010) (Order No. 733); *order on reh'g and clarification*, Order No. 733-A, 134 FERC ¶ 61,127; *clarified*, Order No. 733-B, 136 FERC ¶ 61,185 (2011).

initial version of a Reliability Standard governing transmission relay loadability. We find that the new standard on generator relay loadability, Reliability Standard PRC-025-1, will enhance reliability by imposing mandatory requirements governing generator relay loadability, thereby reducing the likelihood of premature or unnecessary tripping of generators during system disturbances. In addition, we find that the revisions to PRC-023-2 are appropriate in that they clarify the applicability of the two standards governing relay loadability (PRC-025-1 and PRC-023-3), and prevent potential compliance overlap by eliminating potential inconsistencies. Finally, we approve the violation risk factors and violation severity levels as proposed for PRC-025-1, as well as the proposed implementation plans for the two standards.

**I. Background**

**A. Regulatory Background**

3. Section 215 of the FPA requires a Commission-certified Electric Reliability Organization (ERO) to develop mandatory and enforceable Reliability Standards, subject to Commission review and approval.<sup>3</sup> Once approved, the Reliability Standards may be enforced by the ERO subject to Commission oversight, or by the Commission

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<sup>3</sup> 16 U.S.C. § 824o(c) and (d).

independently.<sup>4</sup> In 2006, the Commission certified NERC as the ERO pursuant to FPA section 215.<sup>5</sup>

#### **B. Relay Protection Systems**

4. Protective relays are devices that detect and initiate the removal of faults on an electric system.<sup>6</sup> 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, such as a circuit breaker, to disconnect the element from the rest of the system. Impedance relays, which are the most common type of relays used to protect transmission lines, 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.

#### **C. Development of Reliability Standards on Relay Loadability**

5. Following the August 2003 blackout that affected parts of the Midwest, the Northeast, and Ontario, Canada, NERC and the U.S.-Canada Power System Outage Task Force (Task Force) concluded that a substantial number of transmission lines disconnected during the blackout when load-responsive phase-protection backup distance

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<sup>4</sup> *See id.* § 824o(e).

<sup>5</sup> *North American Electric Reliability Corp.*, 116 FERC ¶ 61,062, *order on reh'g & compliance*, 117 FERC ¶ 61,126 (2006), *aff'd sub nom. Alcoa, Inc. v. FERC*, 564 F.3d 1342 (D.C. Cir. 2009).

<sup>6</sup> 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, a broken wire, or an intermittent connection.”

and phase relays operated unnecessarily, i.e. under non-fault conditions. Although these relays operated according to their settings, the Task Force determined that the operation of these relays for non-fault conditions contributed to cascading outages at the start of the blackout and accelerated the geographic spread of the cascade.<sup>7</sup> Seeking to prevent or minimize the scope of future blackouts, both NERC and the Task Force developed recommendations to ensure that these types of protective relays do not contribute to future blackouts.<sup>8</sup>

6. NERC developed Reliability Standard PRC-023-1 (Transmission Relay Loadability) to address these recommendations, and submitted it for Commission approval under FPA section 215. On March 10, 2010, in Order No. 733, the Commission approved Reliability Standard PRC-023-1.<sup>9</sup> In addition, the Commission directed NERC to (1) make certain modifications to the Reliability Standard, (2) submit a timeline for the development of a new Reliability Standard to address generator protective relay loadability, and (3) develop a new Reliability Standard addressing the issue of protective relay operation during stable power swings.

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<sup>7</sup> U.S.-Canada Power System Outage Task Force, Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations, at 80 (2004) (Final Blackout Report).

<sup>8</sup> See Final Blackout Report, Recommendation 21A; North American Electric Reliability Council, August 14, 2003 Blackout: NERC Actions to Prevent and Mitigate the Impacts of Future Cascading Blackouts, at 13 and Recommendation 8a (2004).

<sup>9</sup> Order No. 733, 130 FERC ¶ 61,221.

**D. NERC Petition and Reliability Standards PRC-025-1 and PRC-023-3****1. Reliability Standard PRC-025-1**

7. On September 30, 2013, NERC submitted a petition seeking approval of Reliability Standard PRC-025-1 (Generator Relay Loadability).<sup>10</sup> NERC stated in its petition that the standard “is designed to prevent generator tripping when conditions do not pose a direct risk to the generator and associated equipment and will reduce the risk of unnecessary generator tripping – events that increase the severity of the disturbance.”<sup>11</sup> NERC further stated that the standard is intended to address the second part of the Commission’s Order No. 733 directives, requiring development of a standard governing generator protective relay loadability.<sup>12</sup> NERC noted that it addressed the first Order No. 733 directive, requiring modification of PRC-023-1, through its revised standard PRC-023-2 (currently in effect).<sup>13</sup> NERC indicated that it is addressing the third portion

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<sup>10</sup> Reliability Standards PRC-025-1 and PRC-023-3 are not attached to this Final Rule. The complete texts of these proposed Reliability Standards are available on the Commission's eLibrary document retrieval system in Docket Nos. RM13-19-000 and RM14-3-000, and are posted on NERC’s web site, *available* at: [http:// www.nerc.com](http://www.nerc.com).

<sup>11</sup> *Petition of the North American Electric Reliability Corp. for Approval of Proposed Reliability Standard PRC-025-1 (Generator Relay Loadability)*, Docket No. RM13-19-000 at 4 (Sept. 30, 2013) (September 30 Petition or Petition). NERC requested that the Commission delay its consideration of PRC-025-1 until NERC could finalize and submit for approval certain related revisions to its transmission relay loadability standard, PRC-023-2. Those revisions were submitted on December 17, 2013, as discussed further below.

<sup>12</sup> *See id.* at 8.

<sup>13</sup> *Id.* (citing *Transmission Relay Loadability Reliability Standard*, Order No. 759, 138 FERC ¶ 61,197 (2012)).

of the Order No. 733 directives, relay operation during stable power swings, as part of a separate phase of the project.<sup>14</sup>

8. NERC explained that the stated purpose of PRC-025-1 is “[t]o set load-responsive protective relays associated with generation Facilities at a level to prevent unnecessary tripping of generators during a system disturbance for conditions that do not pose a risk of damage to the associated equipment.”<sup>15</sup> Reliability Standard PRC-025-1 will apply to any generator owner, transmission owner, or distribution provider “that applies load-responsive protective relays at the terminals of the Elements listed in 3.2, Facilities.”<sup>16</sup>

The term “facilities,” in turn, is defined in section 3.2 of the proposed standard as:

Elements associated with Bulk Electric System (BES) generating units and generating plants, including those . . . identified as Blackstart Resources in the Transmission Operator’s system restoration plan:

3.2.1 Generating unit(s).

3.2.2 Generator step-up (i.e., GSU) transformer(s).

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<sup>14</sup> *Id.* NERC indicated that this third phase of its response to Order No. 733 is tentatively scheduled to be completed in December 2014. *Id.*

<sup>15</sup> September 30 Petition, Ex. A at 3. While NERC has not proposed a definition for the term “load-responsive protective relays,” Attachment A of existing Reliability Standard PRC-023-2, which also uses the term “load-responsive protective relays” states that the standard includes “any protective functions which could trip with or without time delay, on load current.” NERC Reliability Standard PRC-023-2, *available at*: [http://www.nerc.com/\\_layouts/PrintStandard.aspx?standardnumber=PRC-023-2&title=Transmission%20Relay%20Loadability&jurisdiction=United%20States](http://www.nerc.com/_layouts/PrintStandard.aspx?standardnumber=PRC-023-2&title=Transmission%20Relay%20Loadability&jurisdiction=United%20States).

<sup>16</sup> September 30 Petition, Ex. A at 3. NERC further explained that the standard should “include all load-responsive protective relays that are affected by increased generator output in response to system disturbances.” September 30 Petition, Ex. A at 25 (Guidelines and Technical Basis) (hereinafter Guidelines).

- 3.2.3 Unit auxiliary transformer(s) (UAT) that supply overall auxiliary power necessary to keep generating unit(s) online.
- 3.2.4 Elements that connect the GSU transformer(s) to the Transmission system that are used exclusively to export energy directly from a BES generating unit or generating plant. Elements may also supply generating plant loads.
- 3.2.5 Elements utilized in the aggregation of dispersed power producing resources.

9. Reliability Standard PRC-025-1 has only one requirement, that each applicable entity “shall apply settings that are in accordance with PRC-025-1 – Attachment 1: Relay Settings, on each load-responsive protective relay while maintaining reliable fault protection.”<sup>17</sup> The relay setting options are defined in Table 1 of Attachment 1, and include the specific bus voltage and other inputs to be used depending on the application (e.g., synchronous or asynchronous generator, generator step-up transformer, or unit auxiliary transformer) and the type of relay. For most applications of each type of relay, the proposed standard would give applicable entities the option of adopting relay settings that meet the stated criteria as determined through: (1) a relatively simple calculation; (2) a more complex calculation; or (3) a described simulation. As stated in the standard, the criteria in Attachment 1 “represent short-duration conditions during which generation Facilities are capable of providing system reactive resources, and for which generation

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<sup>17</sup> *Id.* at 18, and Ex. A at 4.

Facilities have been historically recorded to disconnect, causing events to become more severe.”<sup>18</sup>

10. NERC explained in its petition that the specific relay setting criteria are based on system conditions observed during the August 2003 Blackout.<sup>19</sup> Specifically, the criteria for relays applied on synchronous generators, and their associated generator step-up transformers (GSUs) and connecting elements, are based on the response of the synchronous generator to depressed transmission system voltage (with allowances for reactive power losses across the GSU transformer). The criteria for relays applied on asynchronous generators and their associated GSU transformers and connecting elements are based on the more limited response of an asynchronous generator to the depressed voltage (with no allowance for loss of reactive power across the GSU transformer because such losses are not significant).<sup>20</sup> The criteria for relays applied on unit auxiliary transformers (UATs) that supply station service are based on the increased current requirements of station service load during a depressed voltage condition.

11. In its justification for approval of the proposed standard, NERC explained that “[a]nalyses of power system disturbances over the past twenty-five years have found generators to have tripped unnecessarily - an occurrence that has the potential to extend the scope and duration of a disturbance.”<sup>21</sup> According to NERC, during the recovery

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<sup>18</sup> *Id.*, Ex. A at 4 (Rationale for R1).

<sup>19</sup> *Id.* at 10.

<sup>20</sup> *Id.* at 11.

<sup>21</sup> *Id.* at 9.

phase of a disturbance, system voltage may be widely depressed and may fluctuate. To support the system during this phase of a disturbance, NERC explained that the proposed standard “establishes criteria for setting load-responsive relays such that individual generators may provide Reactive Power within their dynamic capability during transient time periods,” thereby avoiding unnecessary tripping of generators and ensuring that “dynamic capability is available to support system recovery.”<sup>22</sup>

12. NERC proposed to assign a “High” violation risk factor to Requirement R1 of PRC-025-1, and a “Severe” violation severity level for failure to apply settings as required. NERC’s Implementation Plan proposed that applicable entities must be in compliance with the new standard: (1) 60 months after regulatory approval where compliance can be achieved without replacement or removal of relays; or (2) 84 months after regulatory approval if replacement or removal of relays is necessary.<sup>23</sup>

## **2. Proposed Reliability Standard PRC-023-3**

13. On December 17, 2013, NERC submitted proposed clarifying changes to Reliability Standard PRC-023-2, as reflected in PRC-023-3, as “Supplemental Information” to its September 30 Petition.<sup>24</sup> NERC explained in its Supplemental Filing that these changes were identified during development of PRC-025-1 as “necessary to establish a bright-line distinction between the applicability of load-responsive protective

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<sup>22</sup> *Id.* at 9-10.

<sup>23</sup> *See* September 30 Petition, Ex. B (Implementation Plan).

<sup>24</sup> *Supplemental Information to the Petition of the North American Electric Reliability Corp. for Approval of Proposed Reliability Standard PRC-025-1 (Generator Relay Loadability)*, Docket No. RM14-3-000 (Dec. 17, 2013) (Supplemental Filing).

relays in the transmission and generator relay loadability Reliability Standards.”<sup>25</sup> NERC explained that stakeholders became concerned about potential compliance overlap between the new generator relay loadability standard, PRC-025-1, and existing standard PRC-023-2, which currently applies to certain elements that connect GSU transformers to the transmission system.

14. In order to clarify that proposed standard PRC-025-1 is intended to cover “all load responsive protective relays applied at the terminals of generators and GSU transformers,”<sup>26</sup> NERC proposed to remove Criterion 6 of Requirement R1 from PRC-023-2 in its entirety. That sub-requirement currently requires applicable entities to:

Set transmission line relays applied on transmission lines connected to generation stations remote to load so they do not operate at or below 230% of the aggregated generation nameplate capability.<sup>27</sup>

NERC also proposed to change the applicability section of PRC-023-2 to exclude “Elements that connect the GSU transformer(s) to the Transmission system that are used exclusively to export energy directly from a BES generating unit or generating plant.”<sup>28</sup>

15. NERC explained in its Supplemental Filing that the two relay loadability standards, as revised, would be based on the location where the relays are applied and not on the intended protection functions, which NERC considers advantageous because it:

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<sup>25</sup> *Id.* at 1-2.

<sup>26</sup> *See id.* at 4.

<sup>27</sup> *See* Supplemental Filing, Ex. A, Redline of PRC-023-2 at 6.

<sup>28</sup> *See* Supplemental Filing at 4, and Ex. A, Proposed Reliability Standard PRC-023-3, Sections 4.2.1.1 and 4.2.2.1.

- (i) Facilitates the establishment of generator relay loadability requirements based on the physics associated with increased generator output during stressed system conditions.
- (ii) Avoids ambiguity as to whether the intended protection function is for the generating unit or the Transmission System. . . .
- (iii) Provides clear division of applicability between the Generator and Transmission Relay Loadability Reliability Standards based on the physical location, independent of the entity that owns the relay.<sup>29</sup>

16. Under NERC's proposed implementation plan, Reliability Standard PRC-023-3 will become effective on the first day of the first calendar quarter beyond the date that the standard is approved by the applicable regulatory authority. Reliability Standard PRC-023-2 would be retired immediately prior to the effective date of PRC-023-3, except that Criterion 6 of Requirement R1 would remain in effect until the effective date of PRC-025-1. Any implementation dates or milestones established under PRC-023-2 would remain in place.<sup>30</sup>

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<sup>29</sup> Supplemental Filing at 5.

<sup>30</sup> As part of its Supplemental Filing, NERC also submitted a report on UAT relay loadability to address concerns raised by minority commenters during the development of PRC-025-1 as to whether UAT relays on the low-voltage side should be included. *See id.* at 6 and Ex. E. The report concludes that there is no adverse reliability impact from Reliability Standard PRC-025-1 as proposed, and finds that "based on a comparison of the simulation models and the actual event data, the simulation results are conservative. The model results, coupled with the NERC Generating Availability Data System (GADS) analysis, are indicative that a reliability gap does not result from excluding relays on the low-voltage side of the UAT from PRC-025-1." Supplemental Filing at 6, Ex. E at 6.

**E. Notice of Proposed Rulemaking and Subsequent Filings**

17. On March 20, 2014, the Commission issued a Notice of Proposed Rulemaking proposing to approve Reliability Standards PRC-023-3 and PRC-025-1.<sup>31</sup> The Commission explained that approving the new Reliability Standard on generator relay loadability, PRC-025-1, would enhance reliability by imposing mandatory requirements governing generator relay loadability, thereby reducing the likelihood of premature or unnecessary tripping of generators during system disturbances. In addition, the Commission noted that the proposed revisions to PRC-023-2 are appropriate because they would clarify the applicability of the two standards governing relay loadability and would prevent potential compliance overlap by eliminating potential inconsistencies.

18. Comments on the NOPR were due by April 28, 2014. Five sets of comments were received, submitted by NERC, by the Edison Electric Institute (EEI) and the Electric Power Supply Association (EPSA) (jointly, EEI/EPSA), and by three individuals.<sup>32</sup> All commenters supported the approval of Reliability PRC-023-3 and PRC-025-1. EEI/EPSA describe the standard as “provid[ing] clarity with respect to premature or unnecessary tripping of generators and associated auxiliaries during disturbances while satisfying outstanding directives issued in Order No. 733.”<sup>33</sup> EEI/EPSA note that their earlier concern, “that a simple application of PRC-023-1 to generator protection systems

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<sup>31</sup> *Generator Relay Loadability and Transmission Relay Loadability Reliability Standards, Notice of Proposed Rulemaking*, 146 FERC ¶ 61,189 (2014) (NOPR).

<sup>32</sup> The three individuals are Mark Eliason, G. Wilkowski, and Daniel Shin.

<sup>33</sup> EEI/EPSA Comments at 2.

might unintentionally create a risk of damage to generation assets” has been addressed through “development of PRC-025-1 and the clearly defined guidance provided in Attachment 1 of that standard.”<sup>34</sup> Accordingly, EEI/EPISA support approval of the two standards.

## II. Discussion

19. Pursuant to section 215(d)(2) of the FPA, we approve Reliability Standards PRC-025-1 and PRC-023-3 as just, reasonable, not unduly discriminatory or preferential, and in the public interest. Further, we approve the associated violation risk factors and violation severity levels, and NERC’s proposed implementation plans for the new and revised standards. PRC-025-1 satisfies the Commission directive in Order No. 733 requiring NERC to develop a separate Reliability Standard that addresses generator step-up and auxiliary transformer loadability, and to do so “in a way that is coordinated with the Requirements and expected outcomes of PRC-023-1.”<sup>35</sup> In addition, we find that PRC-025-1 will enhance reliability by imposing mandatory requirements governing generator relay loadability settings, thereby reducing the likelihood of premature or unnecessary tripping of generators during system disturbances. Finally, we find that the modifications reflected in PRC-023-3 will clarify the applicability of the two standards governing relay loadability and prevent potential compliance overlap due to inconsistencies.

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<sup>34</sup> *Id.*

<sup>35</sup> *See* Order No. 733, 130 FERC ¶ 61,221 at PP 104-106.

### **Other Issues**

20. The three individual commenters express support for the approval of PRC-025-1 and PRC-023-3, but raise certain additional concerns about the reliability of the grid. One commenter notes that, despite the increased costs associated with installation or adjustment of relays under the new Reliability Standards, the “appropriate setting of protective relays will be helpful in the case of larger outages.”<sup>36</sup> Another commenter states that the standard “will reduce the likelihood of premature or unnecessary tripping of generators during disturbances,” but also opines on the general need for enhanced reliability standards due to, *inter alia*, proliferation of independent generation facilities, increased burdens on and risks to the grid due to increasing demand, climate change, and physical attacks.<sup>37</sup> Another commenter, while supporting adoption of the rule, notes his larger concern with the security of the grid and the need to prevent physical attacks that could have a far-reaching effect on national security.<sup>38</sup>

### **Commission Determination**

21. For the reasons stated above, we approve Reliability Standards PRC-025-1 and PRC-023-3, and note that all comments relevant to the issues raised by our proposed approval of these Reliability Standards support our approval. With respect to the broader issues raised on the need to address other risks to reliability, including risks to the physical security of the grid, such issues are beyond the scope of the instant proceeding.

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<sup>36</sup> Comments of Mark Eliason at 1.

<sup>37</sup> Comments of G. Wilkowski at 1-2.

<sup>38</sup> Comments of Daniel Shin at 1-2.

However, we note that certain of these issues are being addressed in other pending Commission proceedings, and direct these commenters to Docket No. RM14-1-000, addressing Reliability Standards related to Geomagnetic Disturbances; and Docket No. RM14-15-000, addressing the development of physical security Reliability Standards.

### **III. Information Collection Statement**

22. The collection of information contained in this Final Rule is subject to review by the Office of Management and Budget (OMB) under section 3507(d) of the Paperwork Reduction Act of 1995.<sup>39</sup> OMB's regulations require approval of certain information collection requirements imposed by agency rules.<sup>40</sup> Upon approval of a collection of information, OMB will assign an OMB control number and an expiration date.

Respondents subject to the filing requirements of a rule will not be penalized for failing to respond to this collection of information unless the collections of information display a valid OMB control number.

23. Through issuance of this Final Rule, the Commission approves Reliability Standard PRC-025-1 and revisions to PRC-023-2. Reliability Standard PRC-025-1 will impose new requirements to set certain generator protective relays in accordance with prescribed criteria, and will apply to transmission owners, distribution providers, and generator owners with applicable relays. Affected entities will have to ensure that their

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<sup>39</sup> 44 U.S.C. § 3507(d) (2012).

<sup>40</sup> 5 CFR § 1320.11 (2013).

relays are set in accordance with these criteria and maintain records or other evidence demonstrating their compliance with the standard's requirements. The revisions to PRC-023-2 will result in a change in how relay settings are calculated for certain kinds of relays, but will not result in reporting or recordkeeping requirements or burden.

Public Reporting Burden: Reliability Standard PRC-025-1 does not require responsible entities to file information with the Commission. However, the Reliability Standard requires applicable entities to develop and maintain certain information, subject to audit by a Regional Entity. In particular, each applicable transmission owner, generator owner and distribution provider must "have evidence" to show that each of its load-responsive protective relays are set according to one of the options in Attachment 1 to Reliability Standard PRC-025-1. Our estimate below regarding the number of respondents is based on the NERC compliance registry as of January 31, 2014. According to the NERC compliance registry, NERC has registered 539 distribution providers, 903 generator owners and 344 transmission owners. However, under NERC's compliance registration program, entities may be registered for multiple functions, so these numbers incorporate some double counting. The number of unique entities responding will be approximately 1,019<sup>41</sup> entities registered as a transmission owner, a distribution provider, or a generator owner that is also a transmission owner and/or a distribution owner. The Commission estimates the annual reporting burden and cost as follows:

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<sup>41</sup> This estimate assumes all of the unique entities apply load-responsive protective relays.

| <b>FERC-725G,<sup>42</sup> additions in Final Rule in RM13-19 and RM14-3</b> |  |  |                                  |  |  |   |
|--|--|--|----------------------------------|--|--|---|
|  | <b>Number and Type of Respondents<sup>43</sup></b><br><b>(1)</b> | <b>Annual Number of Responses per Respondent</b><br><b>(2)</b> | <b>Total Number of Responses</b> | <b>Avg. Burden &amp; Cost Per Response</b><br><b>(3)</b> | <b>Total Annual Burden Hours &amp; Total Annual Cost</b><br><b>(1)x(2)x(3)</b> | <b>Cost per Respondent<sup>44</sup></b> |
| (One-time) Review & documentation of relay settings to ensure compliance     | 1,019<br>GO/DP/TO  | 1  | 1,019                            | 20 hrs. &<br>\$59.62/hour                                | 20,380<br>hours &<br>\$1,215,056   | \$1192                                  |

<sup>42</sup> At the time the Notice of Proposed Rulemaking was issued, an unrelated rulemaking affecting other aspects of FERC-725G was pending at OMB for PRA review. Because only one request per OMB Control Number can be pending OMB review at a time, the information collection proposed in this NOPR (RM13-19 and RM14-3) was temporarily labeled FERC 725Q (OMB Control No. 1902-0272). The reporting and record retention requirements for this Final Rule in RM13-19 and RM14-3 are now being submitted to OMB for review under FERC 725G (rather than the temporary FERC 725Q).

<sup>43</sup> GO = Generator Owner, DP = Distribution Provider, TO = Transmission Owner, each of which applies load-responsive protective relays at the terminals of the Elements listed in the proposed standard at section 3.2( Facilities).

<sup>44</sup> The estimated hourly costs (salary plus benefits) are based on Bureau of Labor Statistics (BLS) information (at [http://bls.gov/oes/current/naics3\\_221000.htm#17-0000](http://bls.gov/oes/current/naics3_221000.htm#17-0000)) for an electrical engineer (\$59.62/hour for review and documentation), and for a file clerk (\$28.95/hour for record retention).

|   |                   |   |       |                          |                              |         |
|---|-------------------|---|-------|--------------------------|------------------------------|---------|
| (On-going) Record Retention (of compliance records for R1 and M1, for 3 years or until mitigation complete) | 1,019<br>GO/DP/TO | 1 | 1,019 | 2 hrs. &<br>\$28.95/hour | 2,038<br>hours &<br>\$59,000 | \$57.90 |
|---|-------------------|---|-------|--------------------------|------------------------------|---------|

Title: Mandatory Reliability Standards for the Bulk-Power System

Action: Changes to FERC-725G.

OMB Control No: 1902-0252

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

Frequency of Responses: One-time and ongoing.

Necessity of the Information: Generator Relay Loadability Reliability Standard

(PRC-025-1) would implement 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. Specifically, the purpose of the Reliability Standard is to set load-responsive protective relays associated with generation facilities at a level to prevent unnecessary tripping of generators during a system disturbance for conditions that do not pose a risk of damage to the associated equipment. The 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 Reliability Standards PRC-025-1 and PRC-023-3 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.

24. 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].

25. Comments concerning the information collections proposed in this rule and the associated burden estimates should be sent to the Commission in these dockets and to the Office of Management and Budget, Office of Information and Regulatory Affairs [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 FERC-725G, OMB Control No. 1902-0252, and Docket Nos. RM13-19-000 and RM14-3-000 in your submission.

#### **IV. Regulatory Flexibility Act Certification**

26. The Regulatory Flexibility Act of 1980 (RFA)<sup>45</sup> generally requires a description and analysis of 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

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<sup>45</sup> 5 U.S.C. §§ 601-612 (2012).

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.<sup>46</sup> The SBA recently revised its size standard for electric utilities (effective January 22, 2014) to a standard based on the number of employees, including affiliates (from a standard based on megawatt hours).<sup>47</sup> Under SBA's new size standards, generator owners, distribution providers, and transmission owners are likely included in one of the following categories (with the associated size thresholds noted for each):<sup>48</sup>

- Hydroelectric power generation, at 500 employees;
- Fossil fuel electric power generation, at 750 employees;
- Nuclear power generation, at 750 employees;
- Other electric power generation (e.g. solar, wind, geothermal, and others), at 250 employees;
- Electric bulk power transmission and control, at 500 employees;
- Electric power distribution, at 1,000 employees.

27. Based on U.S. economic census data,<sup>49</sup> the approximate percentage of small firms in these categories varies from 24 percent to 94 percent. However, currently FERC does not have information on how the economic census data compares with entities registered with NERC and is unable to estimate the number of small GOs, DPs, and TOs using the

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<sup>46</sup> 13 CFR § 121.101 (2013).

<sup>47</sup> *Small Business Size Standards: Utilities*, 78 Fed. Reg. 77,343 (Dec. 23, 2013).

<sup>48</sup> 13 CFR § 121.201, Sector 22, Utilities.

<sup>49</sup> Data and further information are available from SBA at <http://www.sba.gov/advocacy/849/12162>.

new SBA definitions.<sup>50</sup> Regardless, FERC recognizes that the rule will likely impact small GOs, DPs, and TOs and estimates the economic impact on each entity below.

28. Reliability Standard PRC-025-1 will serve to enhance reliability by imposing mandatory requirements governing generator relay loadability, thereby reducing the likelihood of premature or unnecessary tripping of generators during system disturbances. The Commission estimates that each of the small entities to whom the Reliability Standard PRC-025-1 applies will incur one-time compliance costs of \$4,480 (i.e., the cost of re-setting any relays found to be out of compliance),<sup>51</sup> plus paperwork and record retention costs of \$1,192 (one-time implementation) and \$57.90 (annual ongoing).<sup>52</sup> Per entity, the total one-time implementation costs are estimated to be \$5,672 (including paperwork and non-paperwork costs) and the annual ongoing costs are estimated to be \$57.90.

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<sup>50</sup> Using the previous SBA definition, 230 of the 1,019 entities affected by the proposed PRC-025-1 would have qualified as small entities.

<sup>51</sup> These are non-paperwork related costs, which are not reflected in the burden described in the Information Collection Section above, and instead reflect the burden of re-setting relays in order to comply with the new requirements of PRC-025-1. Specifically, this figure reflects an estimated time of 8 hours per relay, assuming an average of 8 digital relays which will need to be re-set per small entity, at a cost of \$70 per hour (the average of the salary plus benefits for a manager and an engineer, from Bureau of Labor Statistics at [http://bls.gov/oes/current/naics3\\_221000.htm](http://bls.gov/oes/current/naics3_221000.htm) and <http://www.bls.gov/news.release/ecec.nr0.htm>).

<sup>52</sup> The one-time paperwork-related implementation cost estimate is based on a burden of 20 hours at \$59.62/hour, and the annual record-keeping cost estimate is based on a burden of 2 hours at \$28.95/hour. *See supra* at P 23 and n.44.

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

**V. Environmental Analysis**

30. 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.<sup>53</sup> 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.<sup>54</sup> The actions taken herein fall within this categorical exclusion in the Commission's regulations.

**VI. Document Availability**

31. 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.

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<sup>53</sup> *Regulations Implementing the National Environmental Policy Act of 1969*, Order No. 486, FERC Stats. & Regs. ¶ 30,783 (1987).

<sup>54</sup> 18 CFR § 380.4(a)(2)(ii).

32. 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.

33. User assistance is available for eLibrary and the Commission's website 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](mailto: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](mailto:public.referenceroom@ferc.gov).

## **VII. Effective Date and Congressional Notification**

34. This Final Rule is effective **[INSERT DATE 60 days after publication in the FEDERAL REGISTER]**.

35. The Commission has determined, with the concurrence of the Administrator of the Office of Information and Regulatory Affairs of OMB, that this rule is not a "major rule" as defined in section 351 of the Small Business Regulatory Enforcement Fairness Act of

1996.<sup>55</sup> The Commission will submit the Final Rule to both houses of Congress and to the General Accountability Office.

By the Commission.

( S E A L )

Nathaniel J. Davis, Sr.,  
Deputy Secretary.

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<sup>55</sup> *See* 5 U.S.C. § 804(2).