

137 FERC ¶ 61,067  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

18 CFR Part 40

Docket No. RM11-20-000

Automatic Underfrequency Load Shedding and Load Shedding Plans  
Reliability Standards

(October 20, 2011)

AGENCY: Federal Energy Regulatory Commission.

ACTION: Notice of Proposed Rulemaking.

SUMMARY: Under section 215 of the Federal Power Act, the Federal Energy Regulatory Commission (Commission) proposes to approve Reliability Standards PRC-006-1 (Automatic Underfrequency Load Shedding) and EOP-003-2 (Load Shedding Plans), developed and submitted to the Commission for approval by the North American Electric Reliability Corporation (NERC), the Electric Reliability Organization certified by the Commission. The proposed Reliability Standards establish design and documentation requirements for automatic underfrequency load shedding programs that arrest declining frequency and assist recovery of frequency following system events leading to frequency degradation. The Commission also proposes to approve the related Violation Risk Factors and Violation Severity Levels, implementation plan, and effective date proposed by NERC.

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

ADDRESSES: Comments, identified by docket number, may be filed in the following ways:

- Electronic Filing through <http://www.ferc.gov>. Documents created electronically using word processing software should be filed in native applications or print-to-PDF format and not in a scanned format.
- Mail/Hand Delivery: Those unable to file electronically may mail or hand-deliver comments to: Federal Energy Regulatory Commission, Secretary of the Commission, 888 First Street, NE, Washington, DC 20426.

*Instructions*: For detailed instructions on submitting comments and additional information on the rulemaking process, see the Comment Procedures Section of this document

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SUPPLEMENTARY INFORMATION:

137 FERC ¶ 61,067  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Automatic Underfrequency Load Shedding  
and Load Shedding Plans Reliability Standards

Docket No. RM11-20-000

NOTICE OF PROPOSED RULEMAKING

(October 20, 2011)

1. Under section 215 of the Federal Power Act (FPA),<sup>1</sup> the Commission proposes to approve proposed Reliability Standards PRC-006-1 (Automatic Underfrequency Load Shedding) and EOP-003-2 (Load Shedding Plans). The proposed Reliability Standards were developed and submitted for approval to the Commission by the North American Electric Reliability Corporation (NERC), which the Commission certified as the Electric Reliability Organization (ERO) responsible for developing and enforcing mandatory Reliability Standards.<sup>2</sup> The proposed Reliability Standards establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs, which are meant to arrest declining frequency and assist recovery of frequency following underfrequency events and provide last resort system preservation measures.
2. The Commission proposes to approve the related Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs), implementation plan, and effective date proposed

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

<sup>2</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).

by NERC. The Commission also proposes to approve the retirement of the currently effective Reliability Standards PRC-007-0, PRC-009-0, and EOP-003-1, and the NERC-approved Reliability Standard PRC-006-0.

3. The Commission seeks comments from NERC and other interested persons on specific issues concerning the proposed Reliability Standards.

## **I. Background**

### **A. Underfrequency Load Shedding**

4. An interconnected electric power system must balance load and generation in order to maintain frequency within a reliable range.<sup>3</sup> The balance between generation and load within an interconnected electric power system is shown in the frequency of the system.<sup>4</sup> Underfrequency protection schemes are drastic measures employed if the system frequency falls below a specified value.<sup>5</sup> The Blackout Report provides the following explanation:

[A]utomatic under-frequency load-shedding (UFLS) is designed for use in extreme conditions to stabilize the balance between generation and load after an electrical island has been formed, dropping enough load to allow frequency to stabilize within the island. All synchronous generators in North America are designed to operate at 60 cycles per second (Hertz) and frequency reflects how well load and generation are balanced—if there is more load than generation at any moment, frequency drops below 60 Hz, and it rises above that level if there is more generation than load. By dropping load to match available generation within the island, UFLS is a safety net that helps to prevent the complete blackout of the

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<sup>3</sup> Electric Power Research Institute, *EPRI Power Systems Dynamics Tutorial*, Chapter 4 at page 4-78 (2009), available at [www.epri.com](http://www.epri.com) (EPRI Tutorial).

<sup>4</sup> *Id.*

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

island, which allows faster system restoration afterward. UFLS is not effective if there is electrical instability or voltage collapse within the island.<sup>6</sup>

5. UFLS programs are designed for each defined area or system, and they are commonly implemented with devices installed on the distribution side of the power system.<sup>7</sup> Factors considered in developing a UFLS program include: (1) underfrequency set point, (2) minimum amount of load to shed, and (3) what load and at what locations to shed.

#### **1. Underfrequency Set Point**

6. The underfrequency set point is the frequency at which a specified load will disconnect from the system in a UFLS program.<sup>8</sup> Separately, generators have their own underfrequency set points, which will disconnect them from the system if the frequency drops to a certain value, thus protecting them from damage.<sup>9</sup> Underfrequency set points

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<sup>6</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 92-93 (2004) (Blackout Report).

<sup>7</sup> UFLS programs are designed to maintain a balance between resources and demand in a defined area (e.g., Interconnection, Regional Entity area, or planning coordinator area).

<sup>8</sup> In Order No. 693-A, the Commission directed NERC to collect the frequency and magnitude of load in UFLS systems. *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, at P 145 (2007). NERC submitted a response to this request on February 1, 2008 that included the underfrequency set points and magnitude of load shed in each Regional Entity. NERC, *Response to FERC Supplemental Request for Information on the Status of Underfrequency Load Shedding*, Docket No. RM06-16-000 (filed Feb. 1, 2008).

<sup>9</sup> EPRI Tutorial at page 4-81.

for load shedding are set above the frequencies at which generators disconnect.<sup>10</sup> This is done to prevent losing additional resources that would exacerbate the imbalance between resources and demand, resulting in further frequency declines. UFLS programs initiate at a specified point to shed the first load block, and if necessary additional load blocks at other lower set points, to arrest system frequency decline prior to the loss of additional resources.<sup>11</sup>

7. Once a frequency threshold<sup>12</sup> is identified, the balance of resources and demand to be maintained to prevent the system from reaching that frequency threshold is determined. UFLS programs use validated models of the power system, which consist of mathematical representations of static (e.g., transformers and transmission lines) and dynamic (e.g., generators and motor loads) components of the power system aggregated to simulate how the system performs during system operations.<sup>13</sup> Models are validated, typically, by comparing actual system operations against simulated system operations to ensure the simulated system operations are within a defined and acceptable margin of tolerance relative to actual system operations. Inaccurate power system models may result in a UFLS program that does not perform as desired, thus undermining the reliability objective of UFLS.

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

<sup>11</sup> *Id.* at P 4-78, 4-79.

<sup>12</sup> A frequency threshold is a pre-determined frequency that UFLS programs are designed to avoid reaching, as the system may become unstable at this frequency.

<sup>13</sup> *See, e.g., PowerTech Labs Inc., 2010 Evaluation and Assessment of Southwest Power Pool (SPP) Under-Frequency Load Shedding Scheme, available at <http://www.spp.org/publications/SPP-2010-UFLS-Final.pdf>.*

8. A UFLS program is designed to shed sufficient load to arrest system frequency decline without shedding too much load such that frequency increases above 60 Hz. If a UFLS program is not effective, either because of invalid power system models or miscoordination of the UFLS program with entities inside and outside of the intended island, it may not achieve the reliability objective of preventing cascading outages. This, in turn, could further undermine reliability and recovery of the Bulk-Power System during a system emergency.<sup>14</sup>

## **2. Minimum Amount of Load to Shed**

9. The amount of load to disconnect is the amount of load shed at each underfrequency set point, typically expressed in megawatts or percent of system peak load or both.<sup>15</sup>

## **3. What Load to Shed**

10. In addition to determining the amount of load to disconnect based on validated power system models, a UFLS program identifies what loads to shed and their locations. Therefore, in deciding what specific loads to shed, consideration is given to whether the load is critical (e.g., hospitals, police stations, or fire stations). These loads would typically not be included in a UFLS program.

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<sup>14</sup> For example, if not enough load is shed to arrest frequency decline, additional resources may disconnect from the Interconnection to prevent damage to generators, and thus system frequency will continue to collapse. Conversely, if too much load is shed, the system frequency could exceed 60 Hz also causing resources to disconnect from the Interconnection to prevent damage to generators. EPRI Tutorial at page 4-78.

<sup>15</sup> EPRI Tutorial at page 4-78.

## **B. Mandatory Reliability Standards**

11. Section 215 of the FPA requires a Commission-certified ERO to develop mandatory and enforceable Reliability Standards, which are subject to Commission review and approval. Once approved, the Reliability Standards may be enforced by the ERO, subject to Commission oversight, or by the Commission independently.<sup>16</sup>

12. Pursuant to section 215 of the FPA, the Commission established a process to select and certify an ERO<sup>17</sup> and, subsequently, certified NERC as the ERO.<sup>18</sup> On March 16, 2007, the Commission issued Order No. 693, approving 83 of the 107 Reliability Standards filed by NERC, including Reliability Standards PRC-007-0, PRC-009-0, and EOP-003-1.<sup>19</sup> The Commission neither approved nor remanded NERC-approved Reliability Standard PRC-006-0 in Order No. 693.<sup>20</sup>

## **C. NERC-Approved Reliability Standard**

### **1. PRC-006-0**

13. NERC-approved Reliability Standard PRC-006-0 addresses the development of a regional UFLS program that is used as a last resort to preserve islanding operation

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<sup>16</sup> See 16 U.S.C. 824o(e).

<sup>17</sup> *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).

<sup>18</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>19</sup> Order No. 693, FERC Stats. & Regs. ¶ 31,242 at P 603.

<sup>20</sup> *Id.* P 1479.

following a major system event on the Bulk-Power System that could otherwise cause the island system frequency to collapse. PRC-006-0 requires regional reliability organizations to develop, coordinate, document and assess UFLS program design and effectiveness at least every five years. In Order No. 693, the Commission determined neither to approve nor remand this “fill-in-the-blank” Reliability Standard because the regional procedures had not been submitted, and the Commission held that it would not propose to approve or remand PRC-006-0 until the ERO submitted the additional information.<sup>21</sup>

**D. Currently Effective Reliability Standards**

**1. PRC-007-0**

14. Reliability Standard PRC-007-0 requires transmission owners, transmission operators, load serving entities (LSEs) and distribution providers to provide, and annually update, their underfrequency data to facilitate the regional reliability organization’s maintenance of the UFLS program database.

**2. PRC-009-0**

15. Reliability Standard PRC-009-0 requires that the performance of a UFLS system be analyzed and documented following an underfrequency event by requiring the transmission owner, transmission operator, LSE and distribution provider to document the deployment of their UFLS systems in accordance with the regional reliability organization’s program.

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<sup>21</sup> *Id.* P 1477, 1479.

### 3. EOP-003-1

16. Reliability Standard EOP-003-1 addresses load shedding plans and requires that balancing authorities and transmission operators operating with insufficient transmission and/or generation capacity have the capability and authority to shed load rather than risk a failure of the system. It includes requirements to establish plans for automatic load shedding for underfrequency or undervoltage, manual load shedding to respond to real-time emergencies, and communication with other balancing authorities and transmission operators.

## II. Proposed Reliability Standards

17. On March 31, 2011, NERC filed a petition seeking Commission approval of proposed Reliability Standards PRC-006-1 and EOP-003-2 and requesting the concurrent retirement of the currently effective Reliability Standards PRC-007-0, PRC-009-0, and EOP-003-1 and NERC-approved Reliability Standard PRC-006-0.<sup>22</sup> NERC requests an effective date for PRC-006-1 and EOP-003-2 of one year following the first day of the first calendar quarter after applicable regulatory approvals with respect to all Requirements of the proposed Reliability Standards except Parts 4.1 through 4.6 of Requirement R4 of PRC-006-1. With respect to Parts 4.1 through 4.6 of Requirement R4 of PRC-006-1, NERC requests an effective date of one year following the receipt of

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<sup>22</sup> NERC Petition at 1. The proposed new Reliability Standards are not attached to the NOPR. They are, however, available on the Commission's eLibrary document retrieval system in Docket No. RM11-20-000 and are available on the ERO's website, www.nerc.com. Reliability Standards approved by the Commission are not codified in the CFR.

generation data as would be required in draft Reliability Standard PRC-024-1<sup>23</sup> but no sooner than one year following the first day of the first calendar quarter after applicable regulatory approvals of PRC-006-1.

**A. PRC-006-1**

18. Proposed Reliability Standard PRC-006-1 would apply to planning coordinators, “UFLS entities,”<sup>24</sup> and transmission owners that “own Elements identified in the UFLS program established by the Planning Coordinators.” NERC states that the primary purpose of the proposed Reliability Standard is the establishment of design and document requirements for UFLS programs that arrest declining frequency and assist recovery of frequency following system events leading to frequency degradation.

19. NERC states that PRC-006-1 satisfies the Commission’s criteria, set forth in Order No. 672, for determining whether a proposed Reliability Standard is just, reasonable, not unduly discriminatory or preferential and in the public interest.<sup>25</sup>

20. According to NERC, PRC-006-1 is designed to achieve a specific reliability goal by establishing design and documentation requirements for automatic UFLS programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures. NERC contends that PRC-006-1 contains a technically sound method to achieve its reliability goal by establishing a

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<sup>23</sup> PRC-024-1 addresses “Generator Performance During Frequency and Voltage Excursions” and is currently being developed in the NERC standard drafting process.

<sup>24</sup> PRC-006-1 defines “UFLS entities” as: “All entities that are responsible for the ownership, operation, or control of UFLS equipment as required by the UFLS program established by the Planning Coordinators.”

<sup>25</sup> Order No. 672, FERC Stats. & Regs. ¶ 31,204 at P 323-37.

framework for developing, designing, assessing and coordinating UFLS programs, and that PRC-006-1 is clear and unambiguous regarding what is required and who is required to comply with the Reliability Standard.

21. NERC states that PRC-006-1 does not reflect “best practices” without regard to implementation cost.<sup>26</sup> NERC contends that it achieves a specific reliability goal of establishing design and documentation requirements for automatic UFLS programs to arrest declining frequency and assist recovery following underfrequency events, and that UFLS programs provide last resort system preservation measures by shedding load during system disturbances that result in substantial imbalance between load and generation. NERC also maintains that PRC-006-1 does not aim at a “lowest common denominator” but instead establishes common performance characteristics that all UFLS programs must meet to effectively protect Bulk-Power System reliability.<sup>27</sup>

22. NERC states that PRC-006-1 does not include any differentiation in requirements based on entity size, though it provides the opportunity for planning coordinators to consider input from smaller entities when developing the UFLS program. NERC further explains that PRC-006-1 would apply throughout North America, with variances for entities within the Western Electricity Coordinating Council (WECC) and the Quebec Interconnections.

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<sup>26</sup> NERC Petition at 24.

<sup>27</sup> *Id.* at 26.

23. As proposed by NERC, PRC-006-1 has 14 requirements and 19 sub-requirements, summarized as follows:

**Requirement R1:** Requires each planning coordinator to develop and document criteria to identify portions of the bulk electric system that may form islands.

**Requirement R2:** Requires each planning coordinator to identify the islands to serve as a basis for designing its UFLS program. Sub-Requirements 2.1, 2.2, and 2.3 serve as a checklist of items that the entity must consider when identifying islands.

**Requirement R3:** Requires each planning coordinator to develop a UFLS program, including notification of and a schedule for implementation by the UFLS entities within its area, that meets the specific performance characteristics set forth in sub-Requirements 3.1 through 3.3 in simulations of underfrequency conditions resulting from an imbalance of up to 25 percent within the identified island.

**Requirement R4:** Requires each planning coordinator to conduct and document a UFLS design assessment at least once every five years that determines through dynamic simulation whether the UFLS program design meets the performance characteristics in Requirement R3 for each island identified in Requirement R2, with sub-Requirements 4.1 through 4.7 specifying items that the simulation must model.

**Requirement R5:** Requires each planning coordinator to coordinate its UFLS design with all other planning coordinators whose areas or portions of whose areas are also part of the same identified island through specific actions identified in Requirement R5.

**Requirement R6:** Requires each planning coordinator to maintain a UFLS database containing data necessary to model its UFLS program for use in event analyses and

assessments of the UFLS program at least once each calendar year, with no more than 15 months between maintenance activities.

**Requirement R7:** Requires each planning coordinator to provide its UFLS database to other planning coordinators within its Interconnection within 30 calendar days of request.

**Requirement R8:** Requires each UFLS entity to provide data to its planning coordinator(s) according to the format and schedule specified by the planning coordinator(s) to support maintenance of the UFLS database.

**Requirement R9:** Requires each UFLS entity to provide automatic tripping of load in accordance with the UFLS program design and schedule for application determined by its planning coordinator(s) in each planning coordinator area in which it owns assets.

**Requirement R10:** Requires each transmission owner to provide automatic switching of its existing capacitor banks, transmission lines, and reactors to control overvoltage as a result of underfrequency load shedding if required by the UFLS program and schedule for application determined by the planning coordinator(s) in each planning coordinator area in which the transmission owner owns transmission.

**Requirement R11:** Requires each planning coordinator, in whose area a bulk electric system islanding event results in system frequency excursions below the initializing set points of the UFLS program, to conduct and document an assessment of the event within one year of event actuation that evaluates the performance of the UFLS equipment (sub-Requirement 11.1), and the effectiveness of the UFLS program (sub-Requirement 11.2).

**Requirement R12:** Requires each planning coordinator, in whose islanding event assessment (Requirement R11) UFLS program deficiencies are identified, to conduct and

document a UFLS design assessment to consider the identified deficiencies within two years of event actuation.

**Requirement R13:** Requires each planning coordinator, in whose area a bulk electric system islanding event occurred that also included the area(s) or portions of area(s) of other planning coordinator(s) in the same islanding event and that resulted in system frequency excursions below the initializing set points of the UFLS program, to coordinate its event assessment (in accordance with Requirement R11) with all other planning coordinators whose areas or portions of whose areas were also included in the same islanding event by either: (i) conducting a joint event assessment per Requirement R11 among the planning coordinators whose areas or portions of whose areas were included in the same islanding event; or (ii) conducting an independent event assessment per Requirement R11 that reaches conclusions and recommendations consistent with those of the event assessments of the other planning coordinators whose areas or portions of whose areas were included in the same islanding event; or (iii) conducting an independent event assessment per Requirement R11 and where the assessment fails to reach conclusions and recommendations consistent with those of the event assessments of the other planning coordinators whose areas or portions of whose areas were included in the same islanding event, identifying differences in the assessments that likely resulted in the differences in the conclusions and recommendations and report these differences to the other planning coordinators whose areas or portions of whose areas were included in the same islanding event and to the ERO.

**Requirement R14:** Requires the planning coordinator to respond to written comments submitted by UFLS entities and transmission owners within its planning coordinator area following a comment period and before finalizing its UFLS program, indicating in the written response to comments whether changes will be made or reasons why changes will not be made to the UFLS program, including a schedule for implementation (sub-Requirement 14.1) and the UFLS design assessment (sub-Requirement 14.2).

**B. EOP-003-2**

24. Proposed Reliability Standard EOP-003-2 would apply to balancing authorities and transmission operators. NERC states that EOP-003-2 makes minimal changes to EOP-003-1 by removing references to UFLS, which NERC describes as redundant in light of proposed Reliability Standard PRC-006-1, and instead focuses proposed Reliability Standard EOP-003-2 on undervoltage conditions.

**III. Discussion**

25. Pursuant to section 215(d)(2) of the FPA, the Commission proposes to approve Reliability Standard PRC-006-1 and EOP-003-1 as just, reasonable, not unduly discriminatory or preferential, and in the public interest. The Commission believes that the UFLS program addressed in the proposed Reliability Standards is important to arresting declining frequency and assisting recovery of frequency following system events that lead to system instability, which can result in a blackout. The Commission finds that the proposed Reliability Standards are necessary for reliability because UFLS is used in extreme conditions to stabilize the balance between generation and load after an electrical island has been formed, dropping enough load to allow frequency to stabilize

within the island. Reliability Standard PRC-006-1, in conjunction with the conforming changes to EOP-003-2, provides last resort Bulk-Power System preservation measures by establishing the first national Reliability Standard of common performance characteristics that all UFLS programs must meet. In addition, the Commission proposes to approve the related VRFs and VSLs, implementation plan, and effective date proposed by NERC. Finally, the Commission proposes to approve the retirement of the currently effective Reliability Standards PRC-007-0, PRC-009-0, and EOP-003-1, and the NERC-approved Reliability Standard PRC-006-0.

26. The Commission addresses or seeks comments from the ERO and other interested persons on aspects of the proposed Reliability Standards. Specifically, we address or seek comments on the following issues: (A) impact of resources not connected to the bulk electric system; (B) validation of power system models used to simulate ULFS programs; (C) scope of UFLS events assessments; (D) impact of generator owner trip settings outside of the UFLS program; (E) UFLS program coordination with other protection systems; (F) identification of island boundaries in UFLS programs; (G) automatic load shedding in PRC-006-1 and manual load shedding in EOP-003-2; (H) elimination of balancing authority responsibilities in EOP-003-2; and (I) the “Lower VSL” for Requirement R8 and the “Medium” VRF for Requirement R5 of PRC-006-1. These issues also apply to the corresponding Requirements in the requested regional variance for WECC in PRC-006-1.

**A. Impact of Resources Not Connected to Bulk Electric System Facilities**

27. As described above, UFLS programs are designed to maintain balance between resources and load in a defined area (e.g., an Interconnection, Regional Entity area, or planning coordinator area). When a resource is lost, load exceeds supply causing frequency to decrease below its scheduled value (e.g., 60 Hz in the United States).

Conversely, a loss of load or excess supply can result in higher frequencies than scheduled, resulting in an overfrequency condition. As a last resort, UFLS programs are initiated during extreme underfrequency conditions to reestablish balance by shedding load at predetermined frequencies and times to prevent system-wide blackouts.

28. Requirement R2 of PRC-006-1 requires planning coordinators to identify islands to serve as a basis for designing UFLS programs. Requirement R3 addresses performance characteristics for UFLS programs. Requirement R4 requires each planning coordinator to conduct and document the assessment of its UFLS design and determine if the UFLS program meets the performance characteristics in Requirement R3 for each island identified in Requirement R2.

29. The simulations outlined in Requirement R4 all concern individual generating units greater than 20 MVA gross nameplate rating or generating plants/facilities greater than 75 MVA “connected to the bulk electric system.” However, some generation that meets the 20 MVA and 75 MVA criteria is not connected to bulk electric system facilities. Accordingly, those resources not connected to bulk electric system facilities would not be modeled pursuant to Requirement R4. However, a resource not connected to the bulk electric system may serve load designed to be shed in a UFLS program. The

Commission is concerned that failure to account for resources not connected to the bulk electric system in a planning coordinator's UFLS program could result in the planning coordinator being unaware of how such resources respond to underfrequency conditions. If the planning coordinator is unaware of how these facilities have responded, it may plan to shed more load than is required for an area's frequency to return to normal. This could lead to an unintended overfrequency condition if the plan is carried out in the operating timeframe. These conditions, in turn, could lead the plan to violate the performance characteristics specified in Requirement R3.

30. The performance characteristics identified in Requirement R3 provide acceptable parameters for developing UFLS programs that are designed to restore balance between resources and load. However, the Commission is concerned that generation resources or facilities that are not connected to the bulk electric system may not be considered during the development of UFLS programs.

31. The Commission seeks comments from the ERO and other interested persons as to whether and how all resources required for the reliable operation of the bulk electric system, including resources not connected to bulk electric system facilities, are considered in the development of UFLS programs under Requirements R3 and R4.

**B. Validation of Power System Models**

32. Power systems consist of static components (e.g., transformers and transmission lines) and dynamic components (e.g., generators and motor loads). Mathematical representations of these components are aggregated to create an area's power system

model. Power system planners<sup>28</sup> and system operators base decisions on simulations, both static and dynamic, using area power system models to meet requirements in both Commission-approved planning and operational Reliability Standards.<sup>29</sup>

33. Requirements R4 and R11 of PRC-006-1 require applicable entities to use dynamic simulations to design and assess the effectiveness of UFLS programs. As previously discussed, UFLS programs are designed to provide last resort system preservation measures by: (1) arresting declining frequency; and (2) assisting recovery of frequency following underfrequency events. Dynamic simulations that do not accurately represent the power system can result in an UFLS program that is ineffective.

34. The Commission believes that the UFLS program design requirements established in Requirement R2 and the required assessments established in Requirements R4 and R11 of PRC-006-1 are generally acceptable and include improvements above the current Reliability Standards. Accordingly, the Commission believes that the language in the proposed Requirements is appropriate.

### **C. UFLS Event Assessments**

#### **1. Assessments in the Absence of Island Formation**

35. Requirement R11 of PRC-006-1 requires planning coordinators to conduct assessments after a “BES islanding event results in system frequency excursion below the initializing set points of the UFLS program.” The Commission is concerned whether the

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<sup>28</sup> Power system planners may include functional entities such as transmission planners and planning coordinators.

<sup>29</sup> See, e.g., Reliability Standards MOD-010-0, MOD-012-0 and TOP-002-2a, Requirement R19.

phrase “BES islanding event” could be interpreted to mean that a planning coordinator only has to assess an event if it meets both of the following requirements: (1) system frequency excursions fall below the initializing set point for UFLS; and (2) bulk electric system islands form within the Interconnection. If the frequency falls below the initializing UFLS set point but islands do not form (e.g., because the event was not severe enough to isolate portions of the Interconnection, or UFLS or other protection systems failed to operate properly to form islands), an assessment of the performance of the UFLS program for this event is still useful because it can determine if the UFLS program operated as expected.

36. The Commission seeks clarification from the ERO regarding what actions must planning coordinators take under Requirement R11 if an event results in system frequency excursions falling below this initializing set point for UFLS but without the formation of a bulk electric system island.

## **2. Coordination of Assessments and Results**

37. Requirements R5 and R13 of PRC-006-1 require planning coordinators that share identified islands to coordinate UFLS program design and event assessment. The options for coordinating designs of UFLS programs in Requirement R5 include: (1) developing a common program; (2) conducting a joint UFLS design assessment among the planning coordinators whose area or portions of whose areas are part of the same identified island; or (3) conducting an independent design assessment and, in the event the UFLS design assessment fails to meet Requirement R3, identify modifications to the UFLS program(s)

to meet Requirement R3 and report these modifications as recommendations to the other planning coordinators.

38. The options for coordinating event assessments in Requirement R13 include:

(1) conducting a joint event assessment per Requirement R11 among planning coordinators whose areas were affected; (2) conducting an independent event assessment per Requirement R11 that reaches conclusions and recommendations consistent with other planning coordinators whose areas were affected; or (3) conducting an independent event assessment per Requirement R11 and where the assessment fails to reach conclusions and recommendations consistent with those of the other planning coordinators whose areas were affected by the same islanding event, identify differences in the assessments and report these differences to the other affected planning coordinators. The Commission seeks comments from the ERO and other interested persons as to whether the differences should be subsequently reported to the reliability coordinator for resolution in the event that the process does not resolve differences in the assessments.

39. The Commission believes that Requirements R5 and R13 provide flexibility in coordinating UFLS design programs and event assessments among planning coordinators whose areas fall within the same island or whose areas are affected by the same event. Accordingly, the Commission believes that the language in the proposed Requirements is appropriate.

### 3. Assessment Timeline for Completion

40. Requirement R11 of Reliability Standard PRC-006-1 requires a planning coordinator to perform an island event assessment within one year of an event. If the planning coordinator identifies program deficiencies, Requirement R12 requires the planning coordinator to conduct and document UFLS design assessments, which are meant to consider the deficiencies, within two years of an event. The Commission is concerned that this time frame may be too long since it appears that island event assessments and consideration of deficiencies could reasonably be conducted in a much shorter time frame. Under NERC's proposal, deficiencies could remain within a UFLS program for two years from an event exposing the Bulk-Power System to instability, uncontrolled separation and cascading outages should a frequency event occur that the UFLS program mishandles. NERC provided no explanation of its basis for the proposed two-year time frame.

41. The Commission asks the ERO and other interested persons what the basis is for proposing a two-year time frame. In addition, the Commission seeks clarification from the ERO as to how soon after event actuation would an entity need to implement corrections in response to any deficiencies identified in the event assessment under Requirements R11.

#### D. Generator Owner Trip Settings Outside of the UFLS Program

42. Requirements 4.1 through 4.7 of Reliability Standard PRC-006-1 are intended to capture the effects of generators that trip prior to UFLS initiation. As previously discussed, a generator trip normally creates an imbalance between resources and load

causing system frequency to decline. Some generators may need to disconnect from the system prior to reaching underfrequency set points to protect their components from permanent damage. If this loss occurs during a system event, the generator can no longer provide a response to assist in arresting frequency decline. This resource loss also counteracts the response provided by other resources to arrest frequency decline, increasing the likelihood of instability, uncontrolled separation, and cascading outages.

43. We agree that planning coordinators should consider generators that trip prior to underfrequency set points when developing their UFLS programs. The Commission seeks comments from the ERO and other interested persons on how generation losses outside of the UFLS set points (i.e., generators having trip settings prior to the UFLS underfrequency set points) should be accounted for in UFLS programs (e.g., generator owners who trip outside of the UFLS set points could procure load to shed to account for the loss in generation).

**E. UFLS Program Coordination with Other Protection Systems**

44. Recommendation 21C of the Blackout Report addresses the coordination of protection systems.<sup>30</sup> The recommendation states that NERC shall “determine the goals and principles needed to establish an integrated approach to relay protection for generators and transmission lines and the use of underfrequency and undervoltage load shedding (UFLS and UVLS) programs. An integrated approach is needed to ensure that at the local and regional levels, these interactive components provide an appropriate balance of risks and benefits in terms of protecting specific assets and facilitating overall

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<sup>30</sup> Blackout Report at 159.

grid survival.”<sup>31</sup> Accordingly, an integrated approach requires coordination of all types of protection systems (e.g., UFLS, UVLS), internally and externally to an entity’s area, to be responsive to the Blackout Report.

45. While PRC-006-1 requires coordination of UFLS programs among planning coordinators in Requirements R5, R7, and R13, it does not appear to capture the same level of coordination with other protection systems as in Requirement R1.2.8 of PRC-006-0.<sup>32</sup> The Commission seeks comments from NERC and other interested persons on whether and how coordination with other protection systems is or is not achieved under the new requirements.

#### **F. Identification of Island Boundaries**

46. Requirement R1 of PRC-006-1 directs planning coordinators to develop criteria to select areas that may form islands based on historical events and system studies.

Historical events and system studies provide planning coordinators with the data necessary to determine where islands will occur based on the physics of the system.

Requirement R2.3 clarifies that islands identified in Requirement R1, which span two or more Regional Entity areas, should be broken up such that each Regional Entity area forms an island. Requirement R2.3 allows planning coordinators to “adjust the island boundaries to differ from the Regional Entity area boundaries by mutual consent where necessary” to preserve contiguous island boundaries that better reflect simulations. The

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<sup>31</sup> *Id.*

<sup>32</sup> Requirement 1.2.8 of PRC-006-0 encompasses “[a]ny other schemes that are part of or impact the UFLS program.”

Commission agrees that identifying island boundaries based on where they are likely to occur due to system characteristics, as opposed to maintaining rigid Regional Entity area boundaries, should result in more effective UFLS programs. Accordingly, the Commission encourages cooperation among entities to create UFLS programs that set island boundaries based on where separations are expected to occur during an underfrequency event.

47. In its petition, NERC states that the Requirements allow planning coordinators to “select islands including interconnected portions of the bulk electric system in adjacent Planning Coordinator areas and Regional Entity areas, without the need for coordinating this selection with Planning Coordinators in neighboring regions.”<sup>33</sup> Requirement R2.3 of PRC-006-1, however, requires “mutual consent” to adjust island boundaries from Regional Entity boundaries. The Commission seeks clarification from the ERO concerning the required degree of cooperation and/or “mutual consent” between planning coordinators under the proposed Reliability Standard in order for island boundaries to be set so that, while deviating from Regional Entity boundaries, they better approximate actual island separation boundaries.

**G. Automatic Load Shedding and Manual Load Shedding**

48. Proposed Reliability Standard PRC-006-1 requires automatically shedding predetermined amounts of load if frequency declines to the UFLS set point in order to rebalance resources and demand and prevent frequency decline that might cause instability, uncontrolled separation, or cascading outages. Proposed Reliability Standard

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<sup>33</sup> NERC Petition at 75-76.

EOP-003-2 requires manual load shedding plans, which may be employed in addition to the automatic load shedding in the UFLS program, or to mitigate other reliability issues. If load allocated to be shed automatically is also planned for manual load shedding, then that load resource would be double-counted. Once load is disconnected from the system, either automatically or manually, it cannot be used again to arrest frequency decline. In the event that a load resource is double-counted and removed during automatic UFLS, the manual load shedding cannot be completed if called upon. Even if additional load is located and shed to compensate for this missing load, the system would be put into an un-studied state and could have unpredicted, negative responses. Accordingly, resources allocated to each type of load shedding (i.e., automatic and manual) should not overlap.

49. There are no requirements in PRC-006-1 to coordinate automatic load shedding by UFLS and manual load shedding under EOP-003-2. The Commission seeks comments from the ERO and other interested persons on how the coordination of automatic and manual load shedding is considered in light of the fact that the proposed Reliability Standards do not explicitly require coordination.

#### **H. Elimination of Requirements for Balancing Authorities in EOP-003-2**

50. Requirements R2, R4, and R7 of the currently-effective Reliability Standard EOP-003-1 apply to transmission operators and balancing authorities. Proposed Reliability Standard EOP-003-2 proposes to eliminate balancing authorities from Requirements R2, R4, and R7.

51. Under the proposed modification, balancing authorities would no longer: (i) establish plans for automatic load shedding for underfrequency or undervoltage

conditions (Requirement R2); (ii) consider factors (including frequency, rate of frequency decay, voltage level, rate of voltage decay, or power flow levels) in designing an automatic undervoltage load shedding scheme (Requirement R4); and (iii) coordinate automatic load shedding throughout its area with underfrequency isolation of generating units, tripping of shunt capacitors, and other automatic actions that will occur under abnormal frequency, voltage, or power flow conditions (Requirement R7). In its petition, NERC explains that balancing authorities were deleted from Requirements R2 and R4 “because the frequency related aspects of these requirements were removed, leaving only consideration of automatic undervoltage load shedding in these two requirements.”<sup>34</sup>

NERC’s petition, however, does not explain why balancing authorities were removed from Requirement R7. Moreover, given that balancing authorities would no longer be subject to Requirements R2, R4, and R7 of EOP-003-2 and are not listed as applicable entities in PRC-006-1, the proposed Reliability Standards do not preserve these existing balancing authority responsibilities.

52. The Commission seeks clarification from the ERO as to why these existing balancing authority responsibilities were not incorporated into Reliability Standards PRC-006-1 or EOP-003-2. The Commission also seeks comments from the ERO and other interested persons as to why balancing authorities should not be informed of UFLS program plans that directly impact balancing authority functions.

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<sup>34</sup> NERC Petition at 42.

**I. Violation Risk Factors and Violation Severity Levels**

53. NERC states that each primary requirement in PRC-006-1 and EOP-003-2 is assigned a Violation Risk Factor (VRF) and Violation Severity Level (VSL) and that these elements support the determination of an initial value range for the Base Penalty Amount regarding violations of requirements in Commission-approved Reliability Standards, as defined in the ERO Sanction Guidelines.

54. The Commission proposes to approve the VRFs and VSLs in PRC-006-1 and EOP-003-2. However, the Commission seeks comments from the ERO and other interested persons regarding one proposed VSL and one proposed VRF for PRC-006-1.

55. The “Lower VSL” assignment for Requirement R8 in PRC-006-1 applies when a UFLS entity fails to provide data to its planning coordinator for 5 to 10 calendar days following the schedule specified by the planning coordinator. Requirement R8 of PRC-006-1 does not include a 5-day grace period for providing data to planning coordinators. Accordingly, the subject VSL assignment may be inconsistent with the Commission’s VSL Guideline 3. The guideline states that a VSL “should not appear to redefine or undermine the requirement.”<sup>35</sup> The five-day grace period implicit in the proposed VSL appears to be inconsistent with this guideline. In addition, the proposed VSL creates a compliance issue. Specifically, it is unclear where a UFLS entity falls in the VRF and VSL matrices if it fails to provide data to its planning coordinator within 1 to 5 days of its scheduled date.

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<sup>35</sup> *North American Electric Reliability Corp.*, 123 FERC ¶ 61,284, at P 32 (2008).

56. The VRF for Requirement R5, which requires planning coordinators to coordinate their UFLS program design with other planning coordinators whose area is in part of the same identified island, is proposed as “Medium.” NERC states that Requirement R5 is “not related to similar reliability goals in other standards.”<sup>36</sup> However, coordination of load shedding plans is required in a similar manner in Requirement R3 of currently effective Reliability Standard EOP-003-1,<sup>37</sup> which includes a VRF of “High.” The lack of coordination of UFLS programs among planning coordinators within the same identified island could lead to ineffective UFLS operations and further cascading outages within the island when UFLS is activated.

57. Guideline 3 of the Commission’s VRF Guidelines states that “[a]bsent justification to the contrary, the Commission expects the assignment of Violation Risk Factors corresponding to Requirements that address similar reliability goals in different Reliability Standards would be treated comparably.”<sup>38</sup> The Commission seeks clarification from the ERO why coordination of load shedding plans is a “High” VRF for transmission operators and balancing authorities in EOP-003-2 but NERC proposes a “Medium” VRF for planning coordinators in PRC-006-1.

**J. Implementation Plan and Effective Date**

58. NERC requests an effective date for PRC-006-1 and EOP-003-2 of one year following the first day of the first calendar quarter after applicable regulatory approvals

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<sup>36</sup> NERC Petition at 46.

<sup>37</sup> Proposed Reliability Standard EOP-003-2 includes the same VRF assignment of “High” for Requirement R3.

<sup>38</sup> *North American Electric Reliability Corp.*, 119 FERC ¶ 61,145, at P 25 (2007).

with respect to all Requirements of the proposed Reliability Standards except Parts 4.1 through 4.6 of Requirement R4 of PRC-006-1. With respect to Parts 4.1 through 4.6 of Requirement R4 of PRC-006-1, NERC requests an effective date of one year following the receipt of generation data as required in Reliability Standard PRC-024-1,<sup>39</sup> but no sooner than one year following the first day of the first calendar quarter after applicable regulatory approvals of PRC-006-1.

59. NERC contends that the proposed implementation plan is not excessively long and allows sufficient time for entities to transition and install the necessary processes to become compliant. NERC maintains that the one year phase-in for compliance provides planning coordinators sufficient time: (1) to develop, modify, or validate (to determine that an existing program meets required performance characteristics) existing UFLS programs; and (2) to establish a schedule for implementation, or validate a schedule for completion of program revisions already in progress. Moreover, NERC states that transmission owners and distribution providers will comply with the schedule determined by planning coordinators but no sooner than the effective date of the standard.

60. The Commission proposes to accept the implementation plan and effective date proposed by the ERO for PRC-006-1 and EOP-003-2. However, the Commission seeks comments from the ERO and other interested persons about any potential reliability gaps that may occur during the development and implementation of PRC-024-1, such as how

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<sup>39</sup> PRC-024-1 addresses “Generator Performance During Frequency and Voltage Excursions” and is currently being developed in the NERC standard drafting process under Project 2007-09 (Generator Verification), which is one of NERC’s priority projects.

the planning coordinators will adequately determine and apply UFLS simulations and plans in the absence of generator trip settings.

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

61. The Office of Management and Budget (OMB) regulations require that OMB approve certain reporting and recordkeeping (collections of information) imposed by an agency.<sup>40</sup> Upon approval of a collection(s) of information, OMB will assign an OMB control number and expiration date. Respondents subject to the filing 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.

62. The Commission is submitting these reporting and recordkeeping requirements to OMB for its review and approval under section 3507(d) of PRA. Comments are solicited on the Commission's need for this information, whether the information will have practical utility, the accuracy of provided burden estimate, 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.

63. This Notice of Proposed Rulemaking proposes to approve Reliability Standards PRC-006-1 and EOP-003-2, which would replace currently effective Reliability Standards PRC-007-0, PRC-009-0, EOP-003-1 and NERC-approved Reliability Standard

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<sup>40</sup> 5 CFR 1320.11.

PRC-006-0.<sup>41</sup> As noted previously, Reliability Standard PRC-006-0 was never approved by the Commission, and therefore has never been mandatory and enforceable. On the other hand, Reliability Standards PRC-007-0 and PRC-009-0 were approved by the Commission and are currently mandatory and enforceable. Because Proposed Reliability Standard PRC-006-1 incorporates the requirements from Reliability Standards PRC-006-0, PRC-007-0, and PRC-009-0 some of the existing requirements will become mandatory and enforceable (where previously they were voluntary), while others continue to be so. To properly account for the burden on respondents, the Commission will treat the burden resulting from NERC-approved Reliability Standard PRC-006-0 as essentially new to the industry, even though it is likely that most applicable entities have already been complying.<sup>42</sup>

64. The reporting requirements in proposed Reliability Standard EOP-003-2 are virtually the same as those in currently effective Reliability Standard EOP-003-1. The difference is that proposed Reliability Standard EOP-003-2 proposes to eliminate

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<sup>41</sup> PRC-006-0 was not approved by the Commission but remained effective as a NERC-approved standard (but not mandatory or enforceable). The other three standards were approved by the Commission. *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>42</sup> This statement is made because currently effective Reliability Standards PRC-007-0 and PRC-009-0 required UFLS entities to follow the UFLS program implemented by Reliability Standard PRC-006-0. Therefore, it is likely that entities have already been following the requirements contained in Reliability Standard PRC-006-0.

balancing authorities from Requirements R2 and from Measure M1.<sup>43</sup> This requirement and measure deal with establishing and documenting automatic load shedding plans.

65. Public Reporting Burden: Our estimate below regarding the number of respondents is based on the NERC compliance registry as of 7/29/11. According to the NERC compliance registry, there are 72 planning coordinators and 126 balancing authorities. The individual burden estimates are based on the time needed to gather data, run studies, and analyze study results to design or update the UFLS programs. Additionally, documentation and the review of UFLS program results by supervisors and management is included in the administrative estimations. These are consistent with estimates for similar tasks in other Commission approved standards.

<b>PRC-006-1 (Automatic Underfrequency Load Shedding)<sup>44</sup></b>	Number of Respondents Annually (1)	Number of Responses per Respondent (2)	Average Burden Hours Per Response (3)	Total Annual Burden Hours (1)x(2)x(3)
PCs*: Design and document Automatic UFLS Program	72	1	120	8,640
PCs: Management Review of Documentation			40	2,880
PCs: Record Retention			16	1,152

<sup>43</sup> Balancing authorities are also removed from Requirements R4 and R7, but these do not have reporting requirements associated with them.

<sup>44</sup> Proposed Reliability Standard PRC-006-1 applies to both planning coordinators and to UFLS entities. However, the burden associated with the UFLS entities is not new because it was accounted for under Commission approved Reliability Standards PRC-007-0 and PRC-009-0.

<b>Total</b>					12,672
<b>EOP-003-2 (Load Shedding Plans)<sup>45</sup></b>					
Removal of BAs* from Reporting Requirements in R2 and M1 (Burden Reduction)	126	1	Reporting	-10	-1260
			Record Retention	-1	-126
<b>Total</b>					-1,386
<b>Net Change in Burden</b>					11,286

\*PC=Planning Coordinator; BA=Balancing Authority

Total Annual Hours for Collection: (Compliance/Documentation) = 11,286 hours.

Total Reporting Cost for Planning Coordinators: = 11,520 hours @ \$120/hour =  
\$1,382,400.

Total Record Retention Cost for Planning Coordinators: 1,152 hours @ \$28/hour =  
\$32,256.

Total Reporting and Record Retention Cost Savings for Balancing Authorities: = (1,260  
hours @ \$120/hour) + (126 hours @ \$28/hour) = \$154,728.

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<sup>45</sup> Transmission operators also have to comply with Reliability Standard EOP-003-2 but since the applicable reporting requirements (and associated burden) have not changed from the existing standard to the proposed standard these entities are not included here.

Total Annual Cost (Reporting + Record Retention)<sup>46</sup>: = \$1,414,656 - \$154,728 = \$1,259,928.

Title: Mandatory Reliability Standards for the Bulk-Power System

Action: Proposed Collection FERC-725A.

OMB Control No.: 1902-0244.

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

Frequency of Responses: On Occasion.

Necessity of the Information: This proposed rule proposes to approve the requested modifications to Reliability Standards pertaining to automatic underfrequency load shedding. The proposed Reliability Standards help ensure the reliable operation of the bulk electric system by arresting declining frequency and assisting recovery of frequency following system events leading to frequency degradation.

Internal Review: The Commission has reviewed the proposed Reliability Standards and made a determination that its action is necessary to implement section 215 of the FPA. These requirements, if accepted, should conform to the Commission's expectation for UFLS programs as well as procedures within the energy industry.

66. Interested persons may obtain information on the reporting requirements by contacting the following: Federal Energy Regulatory Commission, 888 First Street, NE

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<sup>46</sup> The hourly reporting cost is based on the cost of an engineer to implement the requirements of the rule. The record retention cost comes from Commission staff research on record retention requirements.

Washington, DC 20426 [Attention: Ellen Brown, Office of the Executive Director, e-mail: DataClearance@ferc.gov, phone: (202) 502-8663, fax: (202) 273-0873].

67. For submitting comments concerning the collection(s) of information and the associated burden estimate(s), 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 RM11-20 and OMB Control Number 1902-0244.

#### **V. Environmental Analysis**

68. 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>47</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>48</sup> The actions proposed here fall within this categorical exclusion in the Commission's regulations.

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<sup>47</sup> Order No. 486, *Regulations Implementing the National Environmental Policy Act of 1969*, FERC Stats. & Regs., Regulations Preambles 1986-1990 ¶ 30,783 (1987).

<sup>48</sup> 18 CFR 380.4(a)(2)(ii).

**VI. Regulatory Flexibility Act Certification**

69. The Regulatory Flexibility Act of 1980 (RFA)<sup>49</sup> generally requires a description and analysis of final rules that will have significant economic impact on a substantial number of small entities. The RFA mandates consideration of regulatory alternatives that accomplish the stated objectives of a proposed rule and that minimize any significant economic impact on a substantial number of small entities. The Small Business Administration's (SBA) Office of Size Standards develops the numerical definition of a small business.<sup>50</sup> 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.<sup>51</sup>

70. Proposed Reliability Standard PRC-006-1 proposes to establish design, assessment, and documentation requirements for automatic UFLS program. It will be applicable to planning coordinators and entities that are responsible for the ownership, operation, or control of UFLS equipment. Proposed Standard EOP-003-2 proposes to remove balancing authorities from having to comply with R2 and M1 of the standard. Comparison of the NERC compliance registry with data submitted to the Energy Information Administration on Form EIA-861 indicates that perhaps as many as 8 small entities are registered as planning coordinators and 18 small entities are registered as

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<sup>49</sup> 5 U.S.C. 601-612.

<sup>50</sup> 13 CFR 121.101.

<sup>51</sup> 13 CFR 121.201, Sector 22, Utilities & n.1.

balancing authorities. The Commission estimates that the small planning coordinators to whom the proposed Reliability Standard will apply will incur compliance and recordkeeping costs of \$157,184 (\$19,648 per planning coordinator) associated with the Standard's requirements. The small balancing authorities will receive a savings of \$154,728 (\$8,596 per balancing authority). Accordingly, proposed Reliability Standards PRC-006-1 and EOP-003-2 should not impose a significant operating cost increase or decrease on the affected small entities.

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

## **VII. Comment Procedures**

72. 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. RM11-20-000, and must include the commenter's name, the organization they represent, if applicable, and their address in their comments.

73. 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 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.

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

75. 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**

76. 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.

77. 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.

78. 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).

List of subjects in 18 CFR Part 40

Electric power; Electric utilities; Reporting and record keeping requirements.

By direction of the Commission. Commissioner Spitzer is not participating.

Nathaniel J. Davis, Sr.,  
Deputy Secretary.