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**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**North American Electric Reliability      )  
Corporation                                     )**

**Docket No. \_\_\_\_\_**

**PETITION OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION  
FOR APPROVAL OF PROPOSED RELIABILITY STANDARD  
EOP-011-1—EMERGENCY OPERATIONS**

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December 29, 2014

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<b>Exhibit A</b>	Proposed Reliability Standard, EOP-011-1 – Emergency Operations
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<b>Exhibit F</b>	Analysis of Commission Directives
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<b>Exhibit H</b>	Standard Drafting Team Roster for Project 2009-03, Emergency Operations

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Pursuant to Section 215(d)(1) of the Federal Power Act (“FPA”)<sup>1</sup> and Section 39.5<sup>2</sup> of the Federal Energy Regulatory Commission’s (“FERC” or “Commission”) regulations, the North American Electric Reliability Corporation (“NERC”)<sup>3</sup> hereby submits proposed Reliability Standard EOP-011-1 and the revised definition of “Energy Emergency” (“Definition”) for Commission approval. NERC requests that the Commission approve proposed Reliability Standard EOP-011-1 (**Exhibit A**) and the Definition and find that the proposed Reliability Standard and Definition are just, reasonable, not unduly discriminatory or preferential, and in the public interest.<sup>4</sup> NERC also requests approval of the associated implementation plan (**Exhibit B**), Violation Risk Factors (“VRFs”) and Violation Severity Levels (“VSLs”) (**Exhibit E**), as detailed in this petition.

As required by Section 39.5(a)<sup>5</sup> of the Commission’s regulations, this petition presents the technical basis and purpose of proposed Reliability Standard EOP-011-1, a demonstration

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<sup>1</sup> 16 U.S.C. § 824o (2006).

<sup>2</sup> 18 C.F.R. § 39.5 (2013).

<sup>3</sup> The Commission certified NERC as the electric reliability organization (“ERO”) in accordance with Section 215 of the FPA on July 20, 2006. *N. Am. Elec. Reliability Corp.*, 116 FERC ¶ 61,062 (2006) (“ERO Certification Order”).

<sup>4</sup> Unless otherwise designated, all capitalized terms shall have the meaning set forth in the *Glossary of Terms Used in NERC Reliability Standards*, available at [http://www.nerc.com/files/Glossary\\_of\\_Terms.pdf](http://www.nerc.com/files/Glossary_of_Terms.pdf).

<sup>5</sup> 18 C.F.R. § 39.5(a) (2013).

that the proposed Reliability Standard meets the criteria identified by the Commission in Order No. 672<sup>6</sup> (**Exhibit C**) and a summary of the development history (**Exhibit H**). Proposed Reliability Standard EOP-011-1 was approved by the NERC Board of Trustees on November 13, 2014.

## **I. EXECUTIVE SUMMARY**

The Emergency Preparedness and Operations (“EOP”) group of Reliability Standards currently consists of eight Reliability Standards that address preparation for emergencies, necessary actions during emergencies and system restoration and reporting following disturbances. The purpose of proposed Reliability Standard EOP-011-1 is to address the effects of operating Emergencies by ensuring each Transmission Operator and Balancing Authority has developed Operating Plans to mitigate operating Emergencies, and that those plans are coordinated within a Reliability Coordinator Area.

Proposed Reliability Standard EOP-011-1 is a fundamentally important Reliability Standard that streamlines the requirements for Emergency operations of the Bulk Electric System. Attachment 1, which is incorporated into Requirements R2 and R6, provides the process and descriptions of the levels used by the Reliability Coordinator when communicating the condition of a Balancing Authority that is experiencing an Energy Emergency. There are three levels of Energy Emergency Alerts:

- **Energy Emergency Alert Level 1: All available generation resources in use.** This occurs when the Balancing Authority is experiencing conditions where all available generation resources are committed to meet firm Load, firm transactions, and reserve commitments, and is concerned about sustaining its required Contingency Reserves.

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<sup>6</sup> The Commission specified in Order No. 672 certain general factors it would consider when assessing whether a particular Reliability Standard is just and reasonable. *See 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, at P 262, 321-37, *order on reh’g*, Order No. 672-A, FERC Stats. & Regs. ¶ 31,212 (2006).

- **Energy Emergency Alert Level 2: Load management procedures in effect.** This occurs when the Balancing Authority is no longer able to provide its expected energy requirements and is an energy deficient Balancing Authority. An energy deficient Balancing Authority has implemented its Operating Plan to mitigated Emergencies. An energy deficient Balancing Authority is still able to maintain minimum Contingency Reserve requirements.
- **Energy Emergency Alert Level 3: Firm Load interruption is imminent or in process.** This occurs when the energy deficient Balancing Authority is unable to meet minimum Contingency Reserve requirements.

The proposed Reliability Standard consolidates requirements from three existing Reliability Standards; EOP-001-2.1b, EOP-003.1, and EOP-003-2, into a single Reliability Standard that clarifies the critical requirements for Emergency Operations while ensuring strong communication and coordination across the functional entities. NERC requests that the Commission approve proposed Reliability Standard EOP-011-1 and find that the proposed Reliability Standard is just, reasonable, not unduly discriminatory or preferential, and in the public interest.

## **II. NOTICES AND COMMUNICATIONS**

Notices and communications with respect to this filing may be addressed to the following:<sup>7</sup>

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<sup>7</sup> Persons to be included on the Commission's service list are identified by an asterisk. NERC respectfully requests a waiver of Rule 203 of the Commission's regulations, 18 C.F.R. § 385.203 (2013), to allow the inclusion of more than two persons on the service list in this proceeding.

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### **III. BACKGROUND**

#### **A. Regulatory Framework**

By enacting the Energy Policy Act of 2005,<sup>8</sup> Congress entrusted the Commission with the duties of approving and enforcing rules to ensure the reliability of the nation’s Bulk-Power System, and with the duties of certifying an ERO that would be charged with developing and enforcing mandatory Reliability Standards, subject to Commission approval. Section 215(b)(1)<sup>9</sup> of the FPA states that all users, owners, and operators of the Bulk-Power System in the United States will be subject to Commission-approved Reliability Standards. Section 215(d)(5)<sup>10</sup> of the FPA authorizes the Commission to order the ERO to submit a new or modified Reliability Standard. Section 39.5(a)<sup>11</sup> of the Commission’s regulations requires the ERO to file with the Commission for its approval each Reliability Standard that the ERO proposes should become mandatory and enforceable in the United States, and each modification to a Reliability Standard that the ERO proposes should be made effective.

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<sup>8</sup> 16 U.S.C. § 824o (2006).

<sup>9</sup> *Id.* § 824(b)(1).

<sup>10</sup> *Id.* § 824o(d)(5).

<sup>11</sup> 18 C.F.R. § 39.5(a) (2012).

The Commission has the regulatory responsibility to approve Reliability Standards that protect the reliability of the Bulk-Power System and to ensure that such Reliability Standards are just, reasonable, not unduly discriminatory or preferential, and in the public interest. Pursuant to Section 215(d)(2) of the FPA<sup>12</sup> and Section 39.5(c)<sup>13</sup> of the Commission's regulations, the Commission will give due weight to the technical expertise of the ERO with respect to the content of a Reliability Standard.

### **B. NERC Reliability Standards Development Process**

The proposed Reliability Standard was developed in an open and fair manner and in accordance with the Commission-approved Reliability Standard development process.<sup>14</sup> NERC develops Reliability Standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC Standard Processes Manual.<sup>15</sup> In its ERO Certification Order, the Commission found that NERC's proposed rules provide for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing Reliability Standards and thus satisfies certain of the criteria for approving Reliability Standards.<sup>16</sup> The development process is open to any person or entity with a legitimate interest in the reliability of the Bulk-Power System. NERC considers the comments of all stakeholders, and a vote of stakeholders and the NERC Board of Trustees is required to approve a Reliability Standard before the Reliability Standard is submitted to the Commission for approval.

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<sup>12</sup> 16 U.S.C. § 824o(d)(2).

<sup>13</sup> 18 C.F.R. § 39.5(c)(1).

<sup>14</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>15</sup> The NERC Rules of Procedure are available at <http://www.nerc.com/AboutNERC/Pages/Rules-of-Procedure.aspx>. The NERC Standard Processes Manual is available at [http://www.nerc.com/comm/SC/Documents/Appendix\\_3A\\_StandardsProcessesManual.pdf](http://www.nerc.com/comm/SC/Documents/Appendix_3A_StandardsProcessesManual.pdf).

<sup>16</sup> 116 FERC ¶ 61,062 at P 250 (2006).

### **C. History of Project 2009-03, Emergency Operations**

NERC is required to conduct a periodic review of each NERC Reliability Standard at least once every 10 years, or once every five years for any Reliability Standard approved by the American National Standards Institute as an American National Standard. The Emergency Operations Five-Year Review Team (“EOP FYRT”) was appointed by the Standards Committee Executive Committee on April 22, 2013. The EOP FYRT reviewed the following Emergency Operations standards: EOP-001-2.1b (Emergency Operations Planning), EOP-002-3.1 (Capacity and Energy Emergencies) and EOP-003-2 (Load Shedding Plans) to determine if the standards should be retained, retired or if revisions were needed in the scope of this project in relation to P81 criteria, Independent Expert report and FERC directives.

The scope of the review included consideration of recommendations from the Industry Expert Review Panel report, Paragraph 81 recommendations and criteria, outstanding FERC Order No. 693 directives, and industry comments. The EOP FYRT posted its draft recommendations to revise the standards for stakeholder comment. After reviewing stakeholder comments, the EOP FYRT submitted its final recommendations to the Standards Committee, along with a Standard Authorization Request (“SAR”). This SAR replaced an earlier SAR, and the new SAR provided the scope for the work of Project 2009-03. The EOP drafting team implemented the EOP FYRT recommendations into proposed reliability standard EOP-011-1.

### **IV. JUSTIFICATION FOR APPROVAL**

As discussed in detail in **Exhibit C**, proposed Reliability Standard EOP-011-1-- Emergency Operations satisfies the Commission’s criteria in Order No. 672 and is just, reasonable, not unduly discriminatory or preferential, and in the public interest. The purpose of proposed Reliability Standard EOP-011-1 is to address the effects of operating Emergencies by ensuring that each Transmission Operator and Balancing Authority has developed Operating



Plans to mitigate operating Emergencies, and that those plans are coordinated within a Reliability Coordinator Area. Provided below is an explanation of the applicability of the proposed Reliability Standard and a justification on a Requirement-by-Requirement basis.

**A. Justification on a Requirement-by-Requirement Basis for EOP-011-1 – Emergency Operations**

The proposed Reliability Standard consists of six Requirements and Attachment 1 and is applicable to Balancing Authorities, Reliability Coordinators, and Transmission Operators.

Attachment 1 describes the levels used by the Reliability Coordinator when communicating the condition of a Balancing Authority that is experiencing an Energy Emergency.

Proposed Requirement R1 addresses the need for Transmission Operators to develop, maintain and implement Operating Plans to mitigate operating Emergencies and specifies minimum requirements for the plans.<sup>17</sup> Proposed Requirement R2 addresses the need for Balancing Authorities to develop, maintain, and implement Operating Plans to mitigate Capacity Emergencies and Energy Emergencies. Proposed Requirement R3 requires Reliability Coordinators to review the Operating Plans submitted by Transmission Operators and Balancing Authorities and is designed to ensure that there is appropriate coordination with respect to reliability risks identified in those Operating Plans. Proposed Requirement R4 requires Transmission Operators and Balancing Authorities to resolve any issues identified by the Reliability Coordinator during its review of plans submitted pursuant to Requirement R3 and resubmit the plan to the Reliability Coordinator for additional review.

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<sup>17</sup> An “Operating Plan” is defined in the *Glossary of Terms Used in NERC Reliability Standards* as “A document that identifies a group of activities that may be used to achieve some goal. An Operating Plan may contain Operating Procedures and Operating Processes. A company-specific system restoration plan that includes an Operating Procedure for black-starting units, Operating Processes for communicating restoration progress with other entities, etc., is an example of an Operating Plan.”

Proposed Requirements R5 and R6 address communication and coordination by Reliability Coordinators during an Emergency. Proposed Requirement R5 requires Reliability Coordinators to notify other Balancing Authorities and Transmission Operators in its Reliability Coordinator Area, and neighboring Reliability Coordinators within 30 minutes of receiving an Emergency notification from a Balancing Authority or Transmission Operator. Requirement R6 requires a Reliability Coordinator that has a Balancing Authority experiencing a potential or actual Energy Emergency within its Reliability Coordinator Area to declare an Energy Emergency Alert, as detailed in Attachment 1. Collectively, these Requirements satisfy the Commission's directives in Order No. 693 and are intended to streamline the requirements for Emergency Operations.

### **Proposed Requirements**

- R1. Each Transmission Operator shall develop, maintain, and implement one or more Reliability Coordinator-reviewed Operating Plan(s) to mitigate operating Emergencies in its Transmission Operator Area. The Operating Plan(s) shall include the following, as applicable:**
- 1.1. Roles and responsibilities for activating the Operating Plan(s);**
  - 1.2. Processes to prepare for and mitigate Emergencies including:**
    - 1.2.1. Notification to its Reliability Coordinator, to include current and projected conditions, when experiencing an operating Emergency;**
    - 1.2.2. Cancellation or recall of Transmission and generation outages;**
    - 1.2.3. Transmission system reconfiguration;**
    - 1.2.4. Redispatch of generation request;**
    - 1.2.5. Provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency; and**
    - 1.2.6. Reliability impacts of extreme weather conditions.**

Requirement R1 of proposed Reliability Standard EOP-011-1 requires Transmission Operators to develop, maintain, and implement one or more Reliability Coordinator-reviewed Operating Plans to mitigate operating Emergencies. An Operating Plan can be one plan or it can be multiple plans. An Operating Plan is implemented by carrying out its stated actions. The

Operating Plan must include the elements enumerated in Parts 1.1 and 1.2 (including sub-parts 1.2.1 through 1.2.6). Given the need for flexibility to account for regional differences and pre-existing methods for mitigating Emergencies, the drafting team included the language “as applicable.” Where any of these specified elements are not applicable, an entity should provide in the plan that the element is not applicable and include an explanation. Transmission Operators are expected to “maintain” Operating Plans by keeping them current and up-to-date. In accordance with the principles of Paragraph 81, the proposed Reliability Standard does not include a specific timeframe or requirement to update Operating Plans as entities are expected to maintain their plans on an on-going and as-needed basis.<sup>18</sup>

- R2. Each Balancing Authority shall develop, maintain, and implement one or more Reliability Coordinator-reviewed Operating Plan(s) to mitigate Capacity Emergencies and Energy Emergencies within its Balancing Authority Area. The Operating Plan(s) shall include the following, as applicable:**
- 2.1. Roles and responsibilities for activating the Operating Plan(s);**
  - 2.2. Processes to prepare for and mitigate Emergencies including:**
    - 2.2.1. Notification to its Reliability Coordinator, to include current and projected conditions when experiencing a Capacity Emergency or Energy Emergency;**
    - 2.2.2. Requesting an Energy Emergency Alert, per Attachment 1;**
    - 2.2.3. Managing generating resources in its Balancing Authority Area to address:**
      - 2.2.3.1. capability and availability;**
      - 2.2.3.2. fuel supply and inventory concerns;**
      - 2.2.3.3. fuel switching capabilities; and**
      - 2.2.3.4. environmental constraints.**
    - 2.2.4. Public appeals for voluntary Load reductions;**
    - 2.2.5. Requests to government agencies to implement their programs to achieve necessary energy reductions;**
    - 2.2.6. Reduction of internal utility energy use;**
    - 2.2.7. Use of Interruptible Load, curtailable Load and demand response;**
    - 2.2.8. Provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load shedding and are capable**

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<sup>18</sup> See Criterion B1, B3 and B5. Paragraph 81 White Paper available at: [http://www.nerc.com/pa/Stand/Project%20201302%20Paragraph%2081%20RF/P81\\_Phase\\_I\\_technical\\_white\\_paper\\_FINAL.pdf](http://www.nerc.com/pa/Stand/Project%20201302%20Paragraph%2081%20RF/P81_Phase_I_technical_white_paper_FINAL.pdf).

**of being implemented in a timeframe adequate for mitigating the  
Emergency; and**  
**2.2.9. Reliability impacts of extreme weather conditions.**

Proposed Requirement R2 requires Balancing Authorities to develop, maintain, and implement one or more Reliability Coordinator-reviewed Operating Plan to mitigate Capacity Emergencies and Energy Emergencies within its Balancing Authority Area. Proposed Requirement R2 specifies that the Balancing Authorities should complete these actions “within its Balancing Authority Area” to articulate the regional bounds of the responsibility of the Balancing Authority. As with proposed Requirement R1, an Operating Plan can be one plan or it can be multiple plans and is implemented by carrying out its stated actions. Balancing Authorities are expected to “maintain” Operating Plans by keeping them current and up-to-date. In accordance with the principles of Paragraph 81, the proposed Reliability Standard does not include a specific timeframe or requirement to update Operating Plans as entities are expected to maintain their plans on an on-going and as-needed basis.

- R3. The Reliability Coordinator shall review the Operating Plan(s) to mitigate operating Emergencies submitted by a Transmission Operator or a Balancing Authority regarding any reliability risks that are identified between Operating Plans.**
- 3.1. Within 30 calendar days of receipt, the Reliability Coordinator shall:**
- 3.1.1. Review each submitted Operating Plan(s) on the basis of compatibility and inter-dependency with other Balancing Authorities’ and Transmission Operators’ Operating Plans;**
  - 3.1.2. Review each submitted Operating Plan(s) for coordination to avoid risk to Wide Area reliability; and**
  - 3.1.3. Notify each Balancing Authority and Transmission Operator of the results of its review, specifying any time frame for resubmittal of its Operating Plan(s) if revisions are identified.**

Proposed Requirement R3 ensures that Reliability Coordinators review Operating Plans submitted by Transmission Operators and Balancing Authorities in a timely manner and to identify specific reliability risks. For those Plans that require revisions, the Reliability Coordinator is required by Proposed Requirement R3 Part 3.1.3 to articulate a timeframe for

resubmittal of the revised plan. This is consistent with the Reliability Coordinator's role within the NERC Functional Model.

**R4. Each Transmission Operator and Balancing Authority shall address any reliability risks identified by its Reliability Coordinator pursuant to Requirement R3 and resubmit its Operating Plan(s) to its Reliability Coordinator within a time period specified by its Reliability Coordinator.**

Proposed Requirement R4 supports the coordination of Operating Plans within a Reliability Coordinator Area in order to identify and correct any Wide Area reliability risks. Proposed Requirement R4 is designed to ensure that the Reliability Coordinator's review of Operating Plans is effective. Any reliability risks identified by the Reliability Coordinator must be addressed by the Transmission Operator or Balancing Authority within a time period specified by the Reliability Coordinator. A specific timeframe is not included in order to allow entities flexibility to address the identified risks, which could vary widely from entity to entity. The time period requested by the Reliability Coordinator to the Transmission Operator and Balancing Authority to update the Operating Plan(s) will depend on the scope and urgency of the requested change.

**R5. Each Reliability Coordinator that receives an Emergency notification from a Transmission Operator or Balancing Authority within its Reliability Coordinator Area shall notify, within 30 minutes from the time of receiving notification, other Balancing Authorities and Transmission Operators in its Reliability Coordinator Area, and neighboring Reliability Coordinators.**

Proposed Requirement R5 is designed to ensure that there is communication among Balancing Authorities and Transmission Operators when an entity is experiencing an Emergency. As the entity with the Wide Area view, the Reliability Coordinator is designated as the entity responsible for ensuring that this communication occurs and in a timely manner.

The drafting team used the existing requirement in currently-effective Reliability Standard EOP-002-3.1 for the Balancing Authority and added the words “within 30 minutes from the time of receiving notification” to the requirement to communicate the intent that timeliness is important, while balancing the concern that in an Emergency there may be a need to alleviate excessive notifications on Balancing Authorities and Transmission Operators. By adding this time limitation, a measurable standard is set for when the Reliability Coordinator must complete these notifications.

**R6. Each Reliability Coordinator that has a Balancing Authority experiencing a potential or actual Energy Emergency within its Reliability Coordinator Area shall declare an Energy Emergency Alert, as detailed in Attachment 1.**

Proposed Requirement R6 requires Reliability Coordinators to declare an Energy Emergency Alert when a Balancing Authority is experiencing a potential or actual Energy Emergency. The declaration of the Energy Emergency by the Reliability Coordinator instead of the Balancing Authority is consistent with current industry practice and ensures that Energy Emergencies are not declared precipitously.

**B. Commission Directives Addressed**

As explained in **Exhibit F** and detailed below, the proposed Reliability Standard satisfies seven Commission directives from Order No. 693, including in an equally efficient and effective alternative manner.

1. *Order No. 693, Paragraph 561, Optimum Number of Continent-Wide System States*

In Order No. 693, the Commission directed NERC to determine the optimum number of

Continent-wide system states and their attributes and to modify EOP-001-0 through the Reliability Standards development process to accomplish this objective.<sup>19</sup> While proposed Reliability Standard EOP-011-1 does not define the optimum number of continent-wide system states, as Emergency system states are case-specific and therefore difficult to define, the proposed standard does require Transmission Operators and Balancing Authorities to identify conditions that put them into an Emergency state via proposed Requirements R1 and R2. Therefore, this directive from Order No. 693 has been satisfied in an equally efficient and effective manner.

2. *Order No. 693, Paragraph 562, Consideration of a Pilot Program*

In Order No. 693, the Commission directed NERC to consider a pilot program as it modifies EOP-010-1. “Such testing will help assure that all applicable entities and their personnel understand how the terms will be used and will allow operators to train staff to make any necessary changes to their policies and procedures.”<sup>20</sup> Given that the drafting team met the directive in Paragraph 561 of Order No. 693 in an alternative manner, the directive in Paragraph 562 is not directly applicable. The drafting team considered this proposal, thereby satisfying the directive--however, the team concluded that a field test would not be a viable option with Emergency states, as one would not intentionally create an Emergency state on the system. Further, proposed Reliability Standard EOP-010-1 provides flexibility by allowing Transmission Operators and Balancing Authorities to identify conditions that put them into an Emergency state via proposed Requirements R1 and R2. For these reasons, the directive from Order No. 693 has been satisfied in an equally efficient and effective manner.

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<sup>19</sup> Order No. 693 at P 561.

<sup>20</sup> Order No. 693 at P 562.

3. *Order No. 693, Paragraph 571, Clarification of Insufficient Transmission Capability*

In Order No. 693, the Commission directed NERC to consider whether to clarify the term “insufficient transmission capability” and referenced the NOPR issued prior to Order No. 693 where the Commission noted that Reliability Standard EOP-002-1 addresses only generation capacity and energy emergencies and does not address emergencies resulting from inadequate transmission capability.<sup>21</sup> Proposed Reliability Standard EOP-011-1 includes transmission-related items that impact transmission capability in the Transmission Operator’s Emergency Operating Plan in Parts 1.2.2 through 1.2.4 of Requirement R1.

1.2.2. Cancellation or recall of Transmission and generation outages;

1.2.3. Transmission system reconfiguration;

1.2.4. Redispatch of generation request;

Redispatch of generation is included because it can impact transmission capability. Typically, redispatching generation means that you are lowering generation in one area and raising it in another. This changes the transmission flows and can have a significant impact and reduce any real or potential System Operating Limit and Interconnection Reliability Operating Limit exceedances that an entity might have, plus it could also free up transmission capability to import power from other Balancing Authorities.

While NERC did not clarify the term “insufficient transmission capability,” proposed Reliability Standard EOP-011-1 addresses emergencies resulting from inadequate transmission capability and is therefore an equally effective and efficient alternative.

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<sup>21</sup> Order No. 693 at P 571.



4. *Order No. 693, Paragraph 573, Technically Feasible Options*

In Order No. 693, the Commission directed NERC to modify Reliability Standard EOP-002-2 to include all technically feasible options in the management of emergencies.<sup>22</sup> “These options should include generation resources, demand response resources and other technologies that meet comparable technical performance requirements.”<sup>23</sup>

Requirements R1 and R2 of proposed Reliability Standard EOP-011-1 include a variety of options to prepare for and mitigate emergencies. Specifically, management of generation resources is included in Part 2.2.3 and demand response is included in Part 2.2.7 of Requirement R2 of proposed Reliability Standard EOP-011-1. For these reasons, the proposed Reliability Standard EOP-011-1 satisfies the Commission’s directive in Paragraph 573 of Order No. 693.

5. *Order No. 693, Paragraph 595, Load Shedding Capability*

In Order No. 693, the Commission directed NERC to modify Reliability Standard EOP-003-1 to:

ensure that adequate load shedding capabilities are provided so that system operators have an effective operating measure of last resort to contain system emergencies and prevent cascading. The Commission recognizes that the amount of load shedding capability required is dependent on system characteristics and therefore it may not be feasible to have a uniform nationwide load shedding capability. This, however, does not preclude a uniform nationwide criterion on the methodology for establishing load shedding capability that would specify the minimum amount of load shedding capability that should be provided based on system characteristics and conditions and the maximum amount of delay before load shedding can be implemented.

Requirement R1 of proposed Reliability Standard EOP-011-1, Part 1.2.5 addresses load shedding and provides that Transmission Providers include in their Operating Plan(s): “Provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load

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<sup>22</sup> Order No. 693 at P 573.

<sup>23</sup> *Id.*

shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency.” Requirement R2 of proposed Reliability Standard EOP-011-1, Part 2.2.8 also addresses load shedding and provides that Balancing Authorities include in their Operating Plan(s): “Provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency.” Collectively, these Requirements address the difficulties of establishing a uniform nationwide load shedding capability and allow entities the flexibility needed to account for differences in system characteristics. For these reasons, proposed Reliability Standard EOP-011-1 satisfies the Commission’s directive in Paragraph 595 of Order No. 693.

6. *Order No. 693, Paragraphs 597 and 603, Periodic Drills of Simulated Load Shedding*

In Order No. 693, the Commission stated that “periodic drills of simulated load shedding should involve all participants required to ensure successful implementation of load shedding plans. As such, the drills should extend beyond system operators to distribution operators and LSEs. The Reliability Standard should require periodic drills by entities subject to section 215, and require those entities to seek participation by other entities. The drills should test the readiness and functionality of the load shedding plans, including, at times, the actual deployment of personnel.”<sup>24</sup> In Order No. 693, the Commission directed NERC to modify Reliability Standard EOP-003-1 to require periodic drills of simulated load shedding.<sup>25</sup> As noted herein, Reliability Standard EOP-003-1 is proposed for retirement. However, this directive is addressed

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<sup>24</sup> Order No. 693 at P 597.

<sup>25</sup> Order No. 693 at P 603.

by several currently-effective Reliability Standards, including EOP-006-2 – System Restoration Coordination, and PER-005-1 – Operations Personnel Training.

Currently-effective Reliability Standard EOP-006-2, Requirement R10 addresses periodic drills and provides:

- R10. Each Reliability Coordinator shall conduct two System restoration drills, exercises, or simulations per calendar year, which shall include the Transmission Operators and Generator Operators as dictated by the particular scope of the drill, exercise, or simulation that is being conducted.
  - R10.1. Each Reliability Coordinator shall request each Transmission Operator identified in its restoration plan and each Generator Operator identified in the Transmission Operators’ restoration plans to participate in a drill, exercise, or simulation at least every two calendar years.

While Requirement R10 and Sub-Requirement 10.1 do not explicitly require simulated load shedding, it certainly could be included in the required drills and exercises. In addition,

Requirement R3 of currently-effective Reliability Standard PER-005-1 provides:

- R3. At least every 12 months each Reliability Coordinator, Balancing Authority and Transmission Operator shall provide each of its System Operators with at least 32 hours of emergency operations training applicable to its organization that reflects emergency operations topics, which includes system restoration using drills, exercises or other training required to maintain qualified personnel.
  - R3.1. Each Reliability Coordinator, Balancing Authority and Transmission Operator that has operational authority or control over Facilities with established IROLs or has established operating guides or protection systems to mitigate IROL violations shall provide each System Operator with emergency operations training using simulation technology such as a simulator, virtual technology, or other technology that replicates the operational behavior of the BES during normal and emergency conditions.

Again, while not explicitly included, the training required by PER-005-1 (and included in Requirement R4 of future-effective Reliability Standard PER-005-2) could include simulated load shedding. For these reasons the Commission’s directive has been addressed in an equally effective and efficient manner.

7. *Order No. 693, Paragraph 601, Consideration of Comments*

In Order No. 693, NERC directed FERC to consider comments submitted regarding coordination of trip settings and automatic and manual load shedding plans. The drafting team considered these comments and addressed the coordination and planning of automatic and manual Load shedding by requiring Transmission Operators and Balancing Authorities to have a Reliability Coordinator-reviewed Operating Plan to mitigate operating Emergencies. Therefore, the Commission's directive in Paragraph 601 of Order No. 693 has been addressed.

**C. Proposed Definition of "Energy Emergency"**

The currently-effective definition of "Energy Emergency" is proposed to be revised as follows:

Energy Emergency - A condition when a Load-Serving Entity or Balancing Authority has exhausted all other resource options and can no longer meet its ~~customers'~~ expected energy Load obligations.

The proposed revisions are intended to clarify that an Energy Emergency is not necessarily limited to a Load-Serving Entity. The drafting team evaluated the impact of these revisions on the body of NERC Reliability Standards and determined that the proposed revisions do not change the reliability intent of other requirements of Definitions.

**D. Justification for Retirements**

Proposed Reliability Standard EOP-011-1 replaces currently-effective Reliability Standards EOP-001-2.1b, EOP-002-3.1, and EOP-003-2. Provided below is an explanation of how these currently-effective Reliability Standards are addressed and improved upon in proposed Reliability Standard EOP-011-1. Additional information is also included in **Exhibit D**.

*1. Justification for Retirement of Reliability Standard EOP-001-2.1b*

Currently-effective Reliability Standard EOP-001-2.1b consists of six requirements and is applicable to Balancing Authorities and Transmission Operators. The purpose of currently-

effective Reliability Standard EOP-001-2.1b is to require Transmission Operators and Balancing Authorities to develop, maintain, and implement a set of plans to mitigate operating emergencies.

Requirements R1 and R2 of proposed Reliability Standard EOP-011-1 address Requirements R1 through R5 of currently-effective Reliability Standard EOP-001-2.1b.

Requirement R1 of currently-effective Reliability Standard EOP-001-2.1b requires Balancing Authorities to have operating agreements with adjacent Balancing Authorities is replaced by proposed Requirement R2 of Reliability Standard EOP-011-1 which requires Balancing Authorities to develop, maintain and implement a Reliability-Coordinator reviewed Operating Plan. Currently-effective Reliability Standard EOP-001-2.1b, Requirement R2 which requires Transmission Operators and Balancing Authorities to develop, maintain and implement a set of plans to mitigate operating emergencies on the transmission system and for insufficient generating capacity and is replaced by proposed Requirements R1 and R2 of Reliability Standard EOP-011-1. Requirements R1 and R2 of proposed Reliability Standard EOP-011-1 require Transmissions Operators and Balancing Authorities to develop, maintain and implement a Reliability-Coordinator reviewed Operating Plan.

Currently-effective Reliability Standard EOP-001-2.1b, Requirement R2.3 requires Transmission Operators and Balancing Authorities to develop, maintain and implement a set of plans for load shedding, and this requirement is maintained in proposed Reliability Standard EOP-011-1 Requirement R1, Part 1.2.5.

Currently-effective Reliability Standard EOP-001-2.1b, Requirement R3 requires Transmission Operators and Balancing Authorities to have emergency plans and specifies elements that must be included in those plans. Proposed Requirements R1 and R2 of Reliability Standard EOP-011-1 require Transmission Operators and Balancing Authorities to develop, maintain, and implement a Reliability-Coordinator reviewed Operating Plan to mitigate

operating Emergencies, and sub-parts of Requirements R1 and R2 specify elements that must be included in those plans.

Currently-effective Reliability Standard EOP-001-2.1b, Requirement R6 requires Transmission Operators and Balancing Authorities to coordinate emergency plans with other Transmission Operators and Balancing Authorities as appropriate, and is proposed for retirement. For these reasons, the proposed retirement of currently-effective Reliability Standard EOP-001-2.1b is expected to have little to no impact on the reliability of the Bulk-Power System.

2. *Justification for Retirement of Reliability Standard EOP-002-3.1*

Currently-effective Reliability Standard EOP-002-3.1 consists of nine requirements and is applicable to Balancing Authorities, Reliability Coordinators, and Load-Serving Entities. The purpose of currently-effective Reliability Standard EOP-002-2.1 is to ensure Reliability Coordinators and Balancing Authorities are prepared for capacity and energy emergencies.

Requirement R1 of currently-effective Reliability Standard EOP-002-3.1 states that each Balancing Authority and Reliability Coordinator shall have the responsibility and clear decision-making authority to take whatever actions are needed to ensure the reliability of its respective area and shall exercise specific authority to alleviate capacity and energy emergencies. As the Commission noted in Order No. 693-A, “a reliability coordinator’s authority to issue directives arises out of the Commission’s approval of Reliability Standards that mandate compliance with such directives.”<sup>26</sup> Proposed Reliability Standard IRO-001-4, Requirement R1 states that each Reliability Coordinator shall act to address the reliability of its Reliability Coordinator Area via direct actions or by issuing Operating Instructions. Proposed Reliability Standard IRO-001-4 is part of Project 2014-03 and is being submitted for Commission approval in a separate petition.

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<sup>26</sup> Order No. 693-A at P 112.

Requirement R2 of proposed Reliability Standard EOP-011-1 replaces Requirements R2 through R7 of currently-effective Reliability Standard EOP-002-3.1. Requirement R2 of currently-effective Reliability Standard EOP-002-3.1 requires Balancing Authorities to take one or more actions as described in its capacity and energy emergency plan and this is addressed in the implementation of Reliability Coordinator-reviewed Operating Plans required by Requirement R2 of proposed Reliability Standard EOP-011-1. Requirement R3 of currently-effective Reliability Standard EOP-002-3.1 requires Balancing Authorities experiencing an operating capacity or energy emergency to communicate its current and future system conditions to its Reliability Coordinator and neighboring Balancing Authorities. This notification is addressed in Part 2.2.1 of Requirement R2 of proposed Reliability Standard EOP-011-1. The drafting team determined that to have a Transmission Operator or Balancing Authority contact other Transmission Operators and Balancing Authorities takes them away from the Emergency at hand, plus they do not have a wide-area view. The Reliability Coordinator can give an indication of impact and make high-level determinations. The Reliability Coordinator has the wide-area overview and can quickly determine impacts of neighboring Transmission Operators, Balancing Authorities and Reliability Coordinators. The Reliability Coordinator is to make contact within 30 minutes of notification pursuant to Requirement R5 of proposed Reliability Standard EOP-011-1. From there, Reliability Standards IRO-005, IRO-006 and IRO-007 would address the specific actions to be taken.

Requirement R4 of currently-effective Reliability Standard EOP-002-3.1 requires a Balancing Authority anticipating an operating capacity or energy emergency to perform all actions necessary and this is addressed in Part 2.2 of Requirement R2 of proposed Reliability Standard EOP-011-1, which requires Balancing Authorities to have processes to prepare for and mitigate Emergencies, including the elements listed in Parts 2.2.1 through 2.2.3. Requirement

R5 of currently-effective Reliability Standard EOP-002-3.1 requires a deficient Balancing Authority to only use the assistance provided by the Interconnection's frequency bias for the time needed to implement corrective actions. This requirement is addressed by Commission-approved Reliability Standard BAL-003-1, which is designed to ensure that Balancing Authorities do not lean on an Interconnection's frequency. Requirement R6 of currently-effective Reliability Standard EOP-002-3.1 specifies remedies that a Balancing Authority shall implement when it cannot comply with the Control Performance and Disturbance Control Standards. These remedies are incorporated into Parts 2.2.1 through 2.2.9 of proposed Reliability Standard EOP-011-1. Requirement R7 of currently-effective Reliability Standard EOP-002-3.1 applies when a Balancing Authority has exhausted the remedies in Requirement R6 and requires Balancing Authorities to manually shed load and request the Reliability Coordinator to declare an Energy Emergency Alert in accordance with Attachment 1. This requirement is incorporated into Requirement R2 of proposed Reliability Standard EOP-011-1, which requires Balancing Authorities to include processes to prepare for and mitigate Emergencies in their Operating Plans.

Requirement R8 of currently-effective Reliability Standard EOP-002-3.1 is addressed by Requirement R6 of proposed Reliability Standard EOP-011-1. Requirement R8 requires a Reliability Coordinator that has any Balancing Authority within its Reliability Coordinator area experiencing a potential or actual Energy Emergency to initiate an Energy Emergency Alert as detailed in Attachment 1. The Reliability Coordinator must act to mitigate the emergency, including requesting emergency assistance. Requirement R6 of proposed Reliability Standard EOP-011-1 requires Reliability Coordinators that have a Balancing Authority experiencing a potential or actual Energy Emergency within its Reliability Coordinator Area to declare an Energy Emergency Alert as detailed in Attachment 1.



For these reasons, the proposed retirement of currently-effective Reliability Standard EOP-002-3.1 is expected to have little to no impact on the reliability of the Bulk-Power System.

*3. Justification for Retirement of Reliability Standard EOP-003-2*

Currently-effective Reliability Standard EOP-003-2 consists of eight requirements and is applicable to Transmission Operators and Balancing Authorities. Requirement R2, R4 and R7 of currently-effective Reliability Standard EOP-003-2 are addressed by proposed Reliability Standard PRC-010-1, which is part of Project 2008-02, Undervoltage Load Shedding and Underfrequency Load Shedding. Proposed Reliability Standard PRC-010-1 was coordinated with the instant project and is proposed for Commission approval in a separate petition.

Requirement R1 of currently-effective Reliability Standard EOP-003-2 requires Transmission Operators or Balancing Authorities operating with insufficient generation or transmission capacity to shed customer load rather than risk an uncontrolled failure of components or cascading outages of the Interconnection. This requirement is addressed by proposed Requirements R1 and R2 of proposed Reliability Standard EOP-011-1, which require Transmission Operators and Balancing Authorities to develop and implement Operating Plans that include processes to prepare for and mitigate Emergencies, including provisions for Load Shedding.

Requirement R2 of currently-effective Reliability Standard EOP-003-2 requires Transmission Operators to establish plans for automatic load shedding for undervoltage conditions if the Transmission Operator or its associated Transmission Planner or Planning Coordinator determine that an undervoltage load shedding scheme is required. This requirement is addressed by Requirement R1 of proposed Reliability Standard PRC-010-1 – Undervoltage Load Shedding, which provides:

- R1. Each Planning Coordinator or Transmission Planner that is developing a UVLS Program shall evaluate its effectiveness and subsequently provide the UVLS Program's specifications and implementation schedule to the UVLS entities responsible for implementing the UVLS Program. The evaluation shall include, but is not limited to, studies and analyses that show:
- 1.1. The implementation of the UVLS Program resolves the identified undervoltage issues that led to its development and design.
  - 1.2. The UVLS Program is integrated through coordination with generator voltage ride-through capabilities and other protection and control systems, including, but not limited to, transmission line protection, autoreclosing, Remedial Action Schemes, and other undervoltage-based load shedding programs.

Requirement R1 of proposed Reliability Standard PRC-010-1 also replaces Requirement R4 of currently-effective Reliability Standard EOP-003-2, which requires Transmission Operators to consider one or more of the following factors in designing an automatic undervoltage load shedding scheme: voltage level, rate of voltage decay, or power flow levels. The elements listed in Requirement R4 of currently-effective Reliability Standard EOP-003-2 are integrated into Part 1.1 of Requirement R1 of proposed Reliability Standard PRC-010-1, as explained in the Guidelines and Technical Basis section of the standard. Requirement R7 of currently-effective Reliability Standard EOP-003-2, requires Transmission Operators to coordinate automatic undervoltage load shedding throughout their areas with tripping of shunt capacitors, and other automatic actions that will occur under abnormal voltage or power flow conditions. Part 1.2 of proposed Reliability Standard PRC-010-1 addresses the elements of Requirement R7 of currently-effective Reliability Standard EOP-003-2, as explained in the Guidelines and Technical Basis section of the standard.

Requirement R3 of currently-effective Reliability Standard EOP-003-2 requires Transmission Operators and Balancing Authorities to coordinate load shedding plans, excluding automatic underfrequency load shedding plans, among other interconnected Transmission

Operators and Balancing Authorities. This coordination is addressed by Requirements R1 and R2 of proposed Reliability Standard EOP-011-1, as explained herein.

Requirement R5 of currently-effective Reliability Standard EOP-003-2 requires Transmission Operators or Balancing Authorities to implement load shedding, in steps established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown. This requirement is addressed by Requirements R1 and R2 of proposed Reliability Standard EOP-011-1, which require Transmission Operators and Balancing Authorities to develop and implement Operating Plans that include processes to prepare for and mitigate Emergencies, including provisions for Load Shedding.

Requirement R6 of currently-effective Reliability Standard EOP-003-2 requires that after a Transmission Operator or Balancing Authority Area separates from the Interconnection, if there is insufficient generating capacity to restore system frequency following automatic underfrequency load shedding, the Transmission Operator or Balancing Authority shall shed additional load. Similar to Requirement R1 and R5 of currently-effective Reliability Standard EOP-003-2, this requirement is addressed by Requirements R1 and R2 of proposed Reliability Standard EOP-011-1, which require Transmission Operators and Balancing Authorities to develop and implement Operating Plans that include processes to prepare for and mitigate Emergencies, including provisions for Load Shedding.

Requirement R8 of currently-effective Reliability Standard EOP-003-2 requires Transmission Operators or Balancing Authorities to have plans for operator controlled manual load shedding to respond to real-time emergencies, and the Transmission Operator or Balancing Authority must be capable of implementing the load shedding in a timeframe adequate for responding to the emergency. This requirement is addressed by Requirements R1 and R2 of proposed Reliability Standard EOP-011-1, which require Transmission Operators and Balancing

Authorities to develop and implement Operating Plans that include processes to prepare for and mitigate Emergencies, including provisions for Load Shedding. Part 1.2.5 of Requirement R1 and Part 2.2.8 of Requirement R2 of proposed Reliability Standard EOP-011-1 also incorporate the concept of a timeframe adequate for mitigating an Emergency.

For these reasons, the proposed retirement of currently-effective Reliability Standard EOP-003-2 is expected to have little to no impact on the reliability of the Bulk-Power System.

**E. Enforceability of EOP-011-1**

The proposed Reliability Standard includes Violation Severity Levels (“VSLs”) and Violation Risk Factors (“VRFs”). The VSLs provide guidance on the way that NERC will enforce the Requirements of the proposed Reliability Standard. The VRFs are one of several elements used to determine an appropriate sanction when the associated Requirement is violated. The VRFs assess the impact to reliability of violating a specific Requirement. The VRFs and VSLs for the proposed Reliability Standards comport with NERC and Commission guidelines related to their assignment. For a detailed review of the VRFs, the VSLs, and the analysis of how the VRFs and VSLs were determined using these guidelines, please see **Exhibit E**.

The proposed Reliability Standard also include Measures that support each Requirement by clearly identifying what is required and how the Requirement will be enforced. These Measures help ensure that the Requirements will be enforced in a clear, consistent, and non-preferential manner and without prejudice to any party.<sup>27</sup>

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<sup>27</sup> Order No. 672 at P 327 (“There should be a clear criterion or measure of whether an entity is in compliance with a proposed Reliability Standard. It should contain or be accompanied by an objective measure of compliance so that it can be enforced and so that enforcement can be applied in a consistent and non-preferential manner.”).

V. **CONCLUSION**

For the reasons set forth above, NERC respectfully requests that the Commission:

- approve the proposed Reliability Standard and Definition and associated elements included in **Exhibit A**, effective as proposed herein;
- approve the implementation plan included in **Exhibit B** as proposed herein.

Respectfully submitted,

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Date: December 29, 2014