

**Critical Energy Infrastructure Information Has Been Redacted From This Public Version**

February 26, 2014

**VIA ELECTRONIC FILING**

Ms. Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, D.C. 20426

**Re: *North American Electric Reliability Corporation,*  
Docket No. RM06-16-000  
Order No. 693, P 629 Compliance Filing – Fourth Quarter 2013**

Dear Ms. Bose:

The North American Electric Reliability Corporation (“NERC”) hereby submits this filing in compliance with Paragraph 629 of the Federal Energy Regulatory Commission’s Order No. 693.<sup>1</sup> Paragraph 629 requires that NERC provide a quarterly informational filing regarding the timeframe to restore power to the auxiliary power systems of U.S. nuclear power plants following a blackout as determined during simulations and drills of system restoration plans. The documents being submitted with this filing include this transmittal letter and a public version of the compliance filing in accordance with NERC’s designation of the data contained in **Exhibit B** as Critical Energy Infrastructure Information (CEII) under the Commission’s rules. 18 C.F.R. §§ 388.112 & 388.113 (2012).

**Exhibit B** of the filing includes data that meets the requirements for treatment as CEII as defined in the Commission’s Rules and Regulations at 18 C.F.R. § 388.113 (2012). The data in **Exhibit B** pertains to proprietary or business design information, including design information related to vulnerabilities of critical energy infrastructure information that is not publicly available. In accordance with the Commission’s Rules and Regulations, 18 C.F.R. § 388.112, a non-public version of the information redacted from the filing is being provided separately. Accordingly, the information set forth in **Exhibit B** has been redacted from this public version of the compliance filing.

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<sup>1</sup> *Mandatory Reliability Standards for the Bulk-Power System*, 118 FERC ¶ 61,218, FERC Stats. & Regs. ¶ 31,242, P 629 (Order No. 693), *order on reh’g, Mandatory Reliability Standards for the Bulk-Power System*, 120 FERC ¶ 61,053 (Order No. 693-A) (2007).

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Ms. Kimberly D. Bose  
February 29, 2013  
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Please contact the undersigned if you have any questions.

Respectfully submitted,

/s/ Brady A. Walker

Brady A. Walker  
Counsel for North American Electric  
Reliability Corporation

UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

MANDATORY RELIABILITY STANDARDS ) Docket No. RM06-16-000  
FOR THE BULK POWER SYSTEM )

FOURTH QUARTER 2013 COMPLIANCE FILING OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION  
IN RESPONSE TO PARAGRAPH 629 OF ORDER NO. 693

I. INTRODUCTION

In its March 16, 2007 Order,<sup>2</sup> the Federal Energy Regulatory Commission (“FERC” or “Commission”) directed the North American Electric Reliability Corporation (“NERC”) to provide a quarterly informational filing regarding the timeframe to restore power to the auxiliary power systems of U.S. nuclear power plants following a blackout as determined during simulations and drills of system restoration plans. This filing reports information collected for the fourth quarter of 2013.

II. NOTICES AND COMMUNICATIONS

Notices and communications with respect to this filing may be addressed to the following:<sup>3</sup>

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<sup>2</sup> *Mandatory Reliability Standards for the Bulk-Power System*, 118 FERC ¶ 61,218, FERC Stats. & Regs. ¶ 31,242 (Order No. 693), *Order on reh’g, Mandatory Reliability Standards for the Bulk-Power System*, 120 FERC ¶ 61,053 (Order No. 693-A) (2007).

<sup>3</sup> Persons to be included on the FERC’s service list are indicated with an asterisk. NERC requests waiver of FERC’s rules and regulations to permit the inclusion of more than two people on the service list.

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**III. SUMMARY OF RESTORATION DATA OF NUCLEAR POWER PLANT OFF-SITE POWER SOURCES**

**A. Background**

In response to comments offered by the U.S. Nuclear Regulatory Commission during the Notice of Proposed Rulemaking process, the Commission expressed concern, in Order No. 693, regarding the role and priority that nuclear power plants should have in Bulk-Power System restoration plans. The Commission addressed its concern in the discussion of the EOP-005-1 — System Restoration Plans Reliability Standard. Specifically, in Paragraph 629 of Order No. 693, the Commission directed NERC as follows:

The Commission directs the ERO to gather data, pursuant to §39.5(f) of the Commission’s regulations, from simulations and drills of system restoration on the time it takes to restore power to the auxiliary power systems of nuclear power plants under its data gathering authority and report that information to the Commission on a quarterly basis.

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In accordance with 18 C.F.R. § 39.2(d), NERC is required to provide information as necessary to the Commission in order to implement section 215 of the Federal Power Act.<sup>4</sup> That same regulation obligates users, owners and operators of the Bulk-Power System to provide NERC with information in support of this same objective. The ERO data request for nuclear power plant off-site power source restoration data, as approved by the NERC Board of Trustees, is found in **Exhibit A**. Following Board of Trustees approval, NERC began to collect nuclear data from U.S. Transmission Operators during the fourth quarter of 2007 and has continued to collect and report the data to the Commission on a quarterly basis. This filing presents data captured for the fourth quarter of 2013.

The specific data requested of the Transmission Operators includes the following information:

- Identification of the reporting entity;
- Name of the exercise, drill or simulation;
- Date of the exercise, drill or simulation;
- Name of the nuclear plant;
- Unit designation (each unit must be included separately);
- Identification of the off-site power source;
- Time duration measured from the time off-site power sources are lost to the time of restoration of the first off-site power source;<sup>5</sup> and
- Discussion of scenario assumptions or constraints impacting the restoration of the first off-site power source to the nuclear power plant.

The following clarifying language was included in the data request to guide the Transmission Operators when supplying the requested data:

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<sup>4</sup> 16 U.S.C. 824o (2006).

<sup>5</sup> For this request, the loss of off-site power sources is the simulated physical interruption of power in support of EOP-005-1 requirements.

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Simulations, drills, or exercises that are implemented for individualized operator training requirements are not included in this request. Simulations, drills, and exercises conducted to support the requirements of EOP-005-1 are included in this request. This request is not intended to require additional simulations or studies to those conducted to satisfy EOP-005-1 requirements.

It is important to note that EOP-005 focuses on restoration plans and does not contain any requirement for restoration plans specific to nuclear plants.

**Exhibit B** presents the raw data collected through this period of observation.

**Exhibit B** has been redacted from the public version of this report to remove the actual raw data collected through the period of observation that qualifies as CEII. NERC has not analyzed this data to identify the impact of the reported off-site power source restoration times relative to the ability of the U.S. nuclear power plants to remain in a mode that permits a timely return to service. NERC will utilize the information contained herein to ensure applicable entities are supporting their obligations as defined in Reliability Standard EOP-005-1 relative to the priority of restoring off-site power sources to nuclear power plants in system restoration plans.

### **B. Summary of Data**

There are one hundred and four nuclear units in the United States. As of the third quarter 2012 report, all units have reported data as requested. Transmission Operators conducted exercises, drills, and simulations in support of EOP-005-1 and reported their results to their respective Regional Entities. The Regional Entities then reported their findings to NERC. In the fourth quarter of 2013, Transmission Operators conducted forty-four individual exercises, drills, or simulations that included the restoration of off-site power sources to a total of sixty-five nuclear units, with several exercises, drills, or

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simulations impacting multiple nuclear units. For example, one entity conducted a system restoration exercise on October 30, 2013 that involved the restoration of off-site power sources to six nuclear units. In the summary chart that follows below, each off-site power source restoration “event” is reported separately for purposes of data analysis.

In total, one hundred fifty-four off-site power source restoration “events” are included in the raw data presented in **Exhibit B** of this filing. Of the one hundred fifty-four events, there were one hundred thirty-two<sup>6</sup> potential first off-site power source restoration events (some units have multiple off-site sources). The remaining twenty-two events included in the data involved the restoration of a subsequent off-site power source beyond the first off-site power source restored. Of the simulated units, seven subsequent off-site power sources were restored within less than two hours, two took four to six hours, three within six to eight hours, four within eight to ten hours and five in more than ten hours with one not having reported a restoration time.

NERC categorized the restoration of first off-site power sources in two-hour timeframes. Forty-eight (48) percent (63 of 132) of the first off-site power source restorations occurred within the first two hours following the simulated blackout event, with eighty (80) percent of restorations (105 of 132) occurring in four hours or less. Forty-two simulated off-site power source restorations were restored within two to four hours, sixteen within four to six hours, one within eight to ten hours, four in more than ten hours with six not having reported a restoration time.

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<sup>6</sup> Not all units provided data for off-site sources beyond the first off-site source restored. The data included represents only the units that provided the data and does not include the entire spectrum of off-site sources beyond the first source for the rest of the units.

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Total Number Offsite Power Source Restoration Events Included in EOP-005-1 Exercises, Drills or Simulations	154
Potential first off-site source restorations	132
Exercises, Drills, or Simulations in which the first off-site source was restored in 2 hours or less following the loss of power	63
Exercises, Drills, or Simulations in which the first off-site source was restored 2-4 hours following the loss of power	42
Exercises, Drills, or Simulations in which the first off-site source was restored 4-6 hours following the loss of power	16
Exercises, Drills or Simulations in which the first off-site source was restored 6-8 hours following the loss of power	0
Exercises, Drills, or Simulations in which the first off-site source was restored 8-10 hours following the loss of power	1
Exercises, Drills or Simulations in which the first off-site source was restored more than 10 hours following the loss of power	4
Exercises, Drills, or Simulations that did not achieve the restoration of the first off-site power source to a nuclear power plant or that did not report a time for source restoration	6

**IV. CONCLUSION**

NERC respectfully requests that the Commission accept this informational filing for the fourth quarter of 2013 in accordance with Paragraph 629 of Order No. 693.

Respectfully submitted,

/s/ Brady A. Walker

Brady A. Walker

*Counsel for North American Electric  
Reliability Corporation*

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**CERTIFICATE OF SERVICE**

I hereby certify that I have served a copy of the foregoing document upon all parties listed on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C. this 26th day of February, 2014.

*/s/ Brady A. Walker*

Brady A. Walker

*Counsel for North American Electric  
Reliability Corporation*

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**Exhibit A**

**Official Data Request to Fulfill FERC Order No. 693 Requirements: Restoration of**

**Nuclear Power Plant Off-site Power Sources**



**Gerry Adamski**  
Vice President and  
Director of Standards

August 24, 2007

TRANSMISSION OPERATOR CONTACT  
TITLE  
COMPANY  
ADDRESS  
CITY, STATE ZIP CODE (TNR, 12pt)

Dear XXXXX:

**Official Data Request to Fulfill FERC Order No. 693 Requirements  
Restoration of Nuclear Power Plant Off-site Power Sources**

Pursuant to the authority granted by FERC Order 672 and as implemented in Title 18, Section 39.2 of the Code of Federal Regulations, NERC as the appointed electric reliability organization issues this official data request as described in **Attachment 1**.

The legal basis in the United States for this authority is explained in FERC's Order 672, paragraph 114:

114. The Commission agrees with commenters that, to fulfill its obligations under this Final Rule, the ERO or a Regional Entity will need access to certain data from users, owners and operators of the Bulk-Power System. Further, the Commission will need access to such information as is necessary to fulfill its oversight and enforcement roles under the statute. Section 39.2 of the regulations will include the following requirement:

(d) Each user, owner or operator of the Bulk-Power System within the United States (other than Alaska and Hawaii) shall provide the Commission, the Electric Reliability Organization and the applicable Regional Entity such information as is necessary to implement section 215 of the Federal Power Act as determined by the Commission and set out in the Rules of the Electric Reliability Organization and each applicable Regional Entity. The Electric Reliability Organization and each Regional Entity shall provide the Commission such information as is necessary to implement section 215 of the Federal Power Act.

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Within the United States, failure to comply with an official data request would constitute a violation of FERC regulations. Enforcement action is available to FERC to deal with violations of its regulations. This is authority FERC could exercise, not authority available to NERC. NERC's Compliance Monitoring and Enforcement Program, including the ability to impose penalties and sanctions, is limited to violations of reliability standards.

Please note the following additional pieces of information relative to this data request:

- An Excel spreadsheet (attached) to serve as a template for providing the requested information.
- Regional entities are requested to submit the requested information to [sarcomm@nerc.net](mailto:sarcomm@nerc.net).

Thank you for your support of this effort. Please contact me should you have any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read "Gary Adams", is centered on a light gray rectangular background.

Enclosure

cc: James D. Castle, Chairman, Operating Reliability Subcommittee  
Regional Entity Management Group

**Exhibit A**  
**Restoration of Nuclear Power Plant Offsite Power Source Data Request**

**Background**

In paragraph 629 of Order No. 693, FERC directs NERC to provide an informational filing regarding the timeframe to restore auxiliary power to nuclear power plants following a blackout as determined during simulations and drills of system restoration plans:

629. “In addition the Commission directs the ERO to gather data, pursuant to § 39.5(f) of the Commission’s regulations, from simulations and drills of system restoration on the time it takes to restore power to the auxiliary power systems of nuclear power plants under its data gathering authority and report that information to the Commission on a quarterly basis.”

**Description of Data Requested**

This request is an ongoing request that begins in the fourth quarter of 2007. If an exercise, drill, or simulation includes the restoration of one or more offsite power sources to a nuclear power plant, the following information is to be prepared and provided *for each offsite power source* in a format developed and provided by NERC:

- Reporting entity
- Name of exercise, drill, or simulation
- Date of exercise, drill, or simulation
- Name of nuclear plant
- Unit designation (each unit must be included separately)
- Identifier of offsite power source
- Time duration when offsite power sources are lost to the restoration of first offsite power source. (For this request, the loss of offsite power sources is the simulated physical interruption of power in support of EOP-005-1 requirements.)
- Discussion of scenario assumptions or constraints impacting the restoration of the initial offsite power source to the nuclear power plant

Simulations, drills, or exercises that are implemented for individualized operator training requirements are not included in this request. Simulations, drills, and exercises conducted to support the requirements of EOP-005-1 are included in this request. This request is not intended to require additional simulations or studies to those conducted to satisfy EOP-005-1 requirements.

The individual data submissions should be submitted to the regional entity who will compile the data in a consolidated format. The regional entity will then forward the compiled data to NERC’s director of standards on a quarterly basis.

To comply with FERC directives, NERC will make a quarterly filing with FERC that includes the compiled data.

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### **How the Data Will Be Used**

The data will be provided to FERC per its directive in Order 693. FERC agrees with issues raised by the Nuclear Regulatory Commission (NRC) concerning the role and priority nuclear power plants should have in system restorations, and directs the collection of this data to aid in its review of this issue.

### **How the Data Will Be Collected and Validated**

The regional entities are requested to coordinate the collection and composite presentation of the requested data from its member participants. Transmission operators responsive to this request are expected to validate the data to be correct prior to submittal.

### **Reporting Entities**

Each transmission operator in the United States who has a nuclear power plant tied to a transmission line that it controls and who is participating in an exercise, drill, or simulation in support of the EOP-005-1 standard will report. Transmission operators that do not have a nuclear power plant tied to a transmission line it controls are exempt from this request.

Transmission operators outside the United States subject to EOP-005-1 are voluntarily encouraged to submit this information as well. NERC will seek permission from these non-U.S. entities for inclusion of its data in the information filed with FERC.

### **Due Date for the Information**

If a transmission operator subject to this data request conducts a drill, simulation, or exercise that includes restoration of the initial offsite power source to a nuclear power plant, the transmission operator is to submit the requested information to its regional entity by the fifteenth of the month; following the end of the previous three-month quarter. The regional entity is to provide a quarterly report of all such submissions by April 30, July 31, October 31, and January 31 for the three-month period that concludes on these dates. This data request begins in the fourth quarter of 2007.

If no drill, exercise, or simulation meeting the criteria described above is conducted during a quarter, no submission by the transmission operator and regional entity is required. This data request does not direct transmission operators to conduct quarterly exercises, drills, or simulations to satisfy this data request. It does require the data to be reported if such a simulation, drill, or exercise is conducted.

### **Restrictions on Disseminating Data (Confidential/CEII)**

NERC will provide this data to FERC per its Order No. 693 directives. This information will be treated as critical energy infrastructure information when submitted to FERC.

### **Estimate on Burden Imposed to Collect Data**

There will be ongoing costs for the staff of responsible entities to respond and for regional entities to collect, compile, and report to NERC the requested data.

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**Exhibit B**

**Restoration of Nuclear Power Plant Off-Site Source Data: Fourth Quarter 2013**

**CRITICAL ENERGY INFRASTRUCTURE INFORMATION REDACTED**