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February 28, 2011

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**

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 (“FERC”) Order No. 693. Order No. 693 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. This filing contains the referenced material pertaining to the fourth quarter of 2010.

NERC also submits a request to terminate its obligation to file quarterly informational filings as required by Paragraph 629 of Order No. 693 on the basis that NERC has fulfilled the intent of the directive. With the implementation of the NUC-001-2 standard that was approved by FERC on April 1, 2010, more explicit requirements are now in place to address the off-site power concerns expressed by the NRC. Accordingly, as explained in more detail herein, the

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express purpose of this data request that is the subject of these quarterly filings has been superseded and the Commission's directives have been addressed.

NERC's filing consists of the following:

- This transmittal letter;
- A table of contents for the entire filing;
- A narrative description summarizing the data collected;
- Official Data Request to Fulfill FERC Order No. 693 Requirements: Restoration of Nuclear Power Plant Off-site Power Sources (**Exhibit A**); and
- Restoration of Nuclear Power Plant Off-site Power Sources Data: 4th Quarter 2010 (**Exhibit B**).

Please contact the undersigned if you have any questions.

Respectfully submitted,

/s/ Holly Hawkins

Holly Hawkins

*Attorney for North American Electric
Reliability Corporation*

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**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 2010 COMPLIANCE FILING OF THE
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION
IN RESPONSE TO PARAGRAPH 629 OF ORDER No. 693
AND REQUEST TO TERMINATE COMPLIANCE FILING OBLIGATION**

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

EXHIBIT B – Restoration of Nuclear Power Plant Off-site Power Sources Data: 4th
Quarter 2010

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**UNITED STATES OF AMERICA
BEFORE THE
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**MANDATORY RELIABILITY STANDARDS) Docket No. RM06-16-000
FOR THE BULK POWER SYSTEM)**

**FOURTH QUARTER 2010 COMPLIANCE FILING OF THE
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION
IN RESPONSE TO PARAGRAPH 629 OF ORDER No. 693
AND REQUEST TO TERMINATE COMPLIANCE FILING OBLIGATION**

I. INTRODUCTION

In its March 16, 2007 Order,¹ the Federal Energy Regulatory Commission (“FERC”) directed the North American 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 includes information for the fourth quarter of 2010. This filing also includes an explanation regarding why the data collection exercise directed by FERC in Order No. 693 is no longer necessary with the implementation of the NUC-001-2 standard and the proposed EOP-005-2 standard. Given that the goal of the directive has been fulfilled, continuing this reporting diverts precious stakeholder, regional entity and ERO resources from other activities.

¹ *Mandatory Reliability Standards for the Bulk-Power System*, 118 FERC ¶ 61,218, FERC Stats. & Regs. ¶ 31,242 (2007) (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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II. NOTICES AND COMMUNICATIONS

Notices and communications with respect to this filing may be addressed to the following:

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*Persons to be included on the FERC's service list are indicated with an asterisk.

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

Background

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

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In addition the [FERC] directs the ERO to gather data, pursuant to §39.5(f) of the [FERC'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 [FERC] on a quarterly basis.

EOP-005-1, Requirement R11 and sub-requirement R11.4 identify the expected priority for restoring off-site power to nuclear stations. They state:

R11. Following a disturbance in which one or more areas of the Bulk Electric System become isolated or blacked out, the affected Transmission Operators and Balancing Authorities shall begin immediately to return the Bulk Electric System to normal.

R11.4. The affected Transmission Operators shall give high priority to restoration of off-site power to nuclear stations.

Importantly, while the requirement provides the instruction to give high priority to off-site power restoration, it does not specify target timeframes.

NERC, in its role as the Electric Reliability Organization (“ERO”) and in accordance with 18 C.F.R. § 39.2(d), is required to provide information as necessary to FERC in order to implement section 215 of the Federal Power Act. As such, users, owners and operators of the bulk power system are required to provide the ERO with information in support of this same objective.

To collect the data necessary to respond to the FERC directive for nuclear power plant off-site power source data, NERC issued a data request process that was, at that time, drafted as a proposed rule of procedure. This procedure required NERC to post a proposed ERO data request for industry comment, followed by NERC Board of Trustees approval, before issuing it as a formal data request.² NERC posted the “nuclear data request” for a 30-day industry comment period that began on June 26, 2007. NERC

² FERC has since approved Section 1600 of the Rules of Procedure, known as the Data Rule, which establishes the process for issuing ERO data requests.

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reviewed the comments received and presented a final version of the data request that was adopted by the NERC Board of Trustees at its August 2, 2007 meeting.

The data presented in **Exhibit B** to this filing contains critical energy infrastructure information. Specifically, the information set forth in **Exhibit B** to the instant filing includes critical energy infrastructure information as defined by FERC Rules of Practice and Procedure (18 C.F.R. Part 388), FERC Orders, and NERC Rules of Procedure. The information pertains to proprietary or business design information, including design information related to vulnerabilities of critical energy infrastructure information that is not publicly available. Accordingly, the information set forth in **Exhibit B** has been redacted from the public filing. In accordance with the FERC Rules of Practice and Procedure, 18 C.F.R. § 388.112, a non-public version of the information redacted from the public filing is being provided under separate cover. NERC requests that the confidential, non-public information be provided special treatment in accordance with the above regulation.

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 2007 and will continue to collect the data quarterly until otherwise directed by FERC. This filing represents data captured for the fourth quarter of 2010.

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

- Reporting entity;
- Name of exercise, drill or simulation;

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

In addition, the following clarifying language was included in the data request to guide the Transmission Operators when supplying the requested data.

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. Accordingly, the reporting conducted under this data request so far will not result in a tabulation resulting in reports for each US nuclear plant.

Exhibit B presents the raw data collected through this period of observation. As noted above, for the public version of this report, **Exhibit B** has been redacted to remove the actual raw data collected through the period of observation, in accordance with the data survey, and in recognition that the information requested constitutes confidential critical energy infrastructure information. Specifically, **Exhibit B** contains information that, if released, could identify system weaknesses and pose a risk of attack on existing infrastructure. NERC respectfully requests that the critical energy infrastructure

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information be protected consistent with national energy security objectives and in accordance with the cited regulation.

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. However, NERC will utilize the information contained herein to ensure applicable entities are supporting their reliability standard obligations as defined in EOP-005-1 relative to the priority of off-site power source restoration to nuclear power plants in plans for system restoration.

Summary of Data

There are a total of 104 nuclear units in the U.S. Of these, 44 were included in exercises, drills, or simulations in support of EOP-005-1 in the fourth quarter of 2010. Overall, Transmission Operators conducted a total of 41 individual exercises, drills, or simulations during this period that included the restoration of off-site power sources to the 44 units, with many events impacting more than one nuclear unit. For example, an entity conducted one system restoration exercise on October 12, 2010 that involved the restoration of offsite power sources to a total of three nuclear units. In the summary chart that follows below, each offsite power source restoration “event” is reported separately for purposes of data analysis. In total, one hundred twenty two (122) off-site power source restoration “events” are included in the raw data presented in **Exhibit B** of this filing.

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Of the one hundred twenty two (122) events, there were ninety-four (94)³ potential initial off-site source restorations (some units have multiple off-site sources). The remaining twenty-eight (28) events included in the data involved the restoration of a subsequent off-site source beyond the first source restored. Of the twenty-eight (28) events, one (1) subsequent source was simulated to be restored in less than 2 hours, three (3) sources in the 2 to 4 hour window, thirteen (13) sources were simulated to be restored in the 4 to 6 hour window, three (3) sources were simulated to be restored in the 6 to 8 hour window, eight (8) sources were simulated to be restored in the 8 to 10 hour window.

NERC categorized the restoration of first off-site sources in two-hour windows. Over eighty-eight (88) percent (83 of 94) of the initial off-site power source restorations occurred within the first six hours following the simulated blackout event, with over forty-eight (48) percent (46 of 94) occurring in two hours or less. Twenty-three (23) sources were simulated to be restored in the 2 to 4 hour window.

Total Number Offsite Power Source Restoration Events Included in EOP-005-1 Exercises, Drills or Simulations	94
Potential first off-site source restorations	46
Exercises, Drills, or Simulations in which the first off-site source was restored in 2 hours or less following the loss of power	23
Exercises, Drills, or Simulations in which the first off-site source was restored 2-4 hours following the loss of power	14
Exercises, Drills, or Simulations in which the first off-site source was restored 4-6 hours following the loss of power	0
Exercises, Drills or Simulations in which the first off-site source was restored 6-8 hours following the loss of power	0

³ Not all units provided data for off-site sources beyond the first 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 initial source for the rest of the units.

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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	10
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	0

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IV. REQUEST TO TERMINATE DATA COLLECTION EXERCISE

NERC has collected data in support of the FERC request for twelve quarters.

Paragraph 625 of Order No. 693 summarized the comments from the Nuclear Regulatory Commission (“NRC”) in response to the then-proposed EOP-005-1 Reliability Standard:

625. NRC suggests that this Reliability Standard include: (1) a requirement to record the time it takes to restore power to the auxiliary power systems of nuclear power plants; (2) a provision stating that the affected transmission operators shall give high priority to restoration of off-site power to nuclear power plants whether or not a nuclear power plant is being powered from the nuclear power plant’s onsite power supply and (3) a provision stating that restoration shall not violate nuclear power plant minimum voltage and frequency requirements.

In response, FERC noted in Paragraph 629 that:

629. NRC raises several issues concerning the role and priority that nuclear power plants should have in system restorations. The Commission shares these concerns and directs the ERO to consider the issues raised by NRC in future revisions of the Reliability Standard through the Reliability Standards development process. 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.

Since the issuance of FERC’s Order No. 693 in March 2007, NERC has addressed the issues raised by the NRC in its development of the NUC-001-2 Reliability Standard— Nuclear Plant Interface Coordination, that was approved by FERC on April 1, 2010. The NUC-001-2 standard requires a Nuclear Plant Generator Operator to coordinate operations and planning with Transmission Entities providing services relating to nuclear plant operating and off-site power delivery requirements. NUC-001-2 also requires Nuclear Plant Generator Operators and Transmission Entities to execute and

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implement interface agreements setting forth expectations and procedures for coordinating operations to meet the nuclear plant licensing requirements and system operating limits affecting nuclear plant operations.

The Commission's specific concerns in Paragraph 629 of Order No. 693 are addressed by the Requirements of the NUC-001-2 standard. For example, in Order No. 693, the Commission directed NERC to gather data from simulations and drills of system restoration on the time it takes to restore power to the auxiliary power systems of nuclear power plants. The currently-effective Requirement R9.2.2 of NUC-001-2 requires Nuclear Plant Generator Operators to identify facilities, components, and configuration restrictions that are essential for meeting the Nuclear Interface Plant Requirements ("NPIRs"). Requirement R9.3.4 includes provisions to address mitigating actions needed *to avoid violating NPIRs and to address periods when responsible Transmission Entities lose the ability to assess the capability of the electric system to meet the NPIRs (emphasis added)*. These provisions also include the obligation to notify the Nuclear Plant Generator Operator of this information within a specified time frame.

Additionally, Requirement R9.3.5 of NUC-001-2 includes provisions for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power. Requirement R4 provides that the applicable Transmission Entities shall incorporate the NPIRs into their operating analyses of the electric system, operate the electric system to meet the NPIRs, and inform the Nuclear Plant Generator Operator when the ability to assess the operation of the electric system affecting NPIRs is lost.

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The current data request that NERC issued in 2007 to begin collecting the data required by these quarterly compliance filings was limited to those instances where drills were conducted under EOP-005. Given the fact that a broader approach involving the establishment of NPIRs under the NUC-001-2 standard is now in place *specifically* to address the off-site power capability concerns of the NRC, the Commission's concerns on this issue that were raised in Order No. 693 have been addressed.

Similarly, NERC filed EOP-005-2 — System Restoration from Blackstart Resources for FERC approval on December 31, 2009. In it, the Transmission Operator shall have a Reliability Coordinator-approved restoration plan that includes “[a] description of how all Agreements or mutually agreed upon procedures or protocols for off-site power requirements of nuclear power plants, including priority of restoration, will be fulfilled during System restoration.”

The Commission issued a Notice of Proposed Rulemaking on the System Restoration Reliability Standards, which includes NERC's proposed EOP-005-2 Reliability Standard, on November 18, 2010 (“November 18 NOPR”).⁴ In the November 18 NOPR, FERC proposed to approve the EOP-005-2 standard, stating that the proposed Reliability Standard effectively addresses the Commission's directive in Order No. 693 to develop timeframes for training and review of restoration plan requirements to simulate contingencies and prepare operators for anticipated and unforeseen events.⁵ NERC responded to the Commission's November 18 NOPR on January 24, 2011.

On the basis that the more explicit requirements contained in the FERC-approved NUC-001-2 standard and the proposed EOP-005-2 standard are now either in place or

⁴ *System Restoration Reliability Standards*, Notice of Proposed Rulemaking, 133 FERC ¶61,161 (November 18, 2010).

⁵ *Id.* at P 19.

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awaiting FERC approval, NERC submits that the express purpose of conducting the data request that is the subject of this filing has been superseded. Considering this point and the significant level of effort for Transmission Operators to collect and forward the information to the Regional Entity, the Regional Entity's effort to accumulate and assemble the data, and NERC's efforts to combine the information into the filings that have been submitted, NERC believes it is appropriate to redirect these resources to other reliability activities with greater impact on the reliability of the bulk power system and more efficient use of industry, regional and ERO resources. NERC therefore respectfully requests that FERC terminate NERC's obligation to collect and file the data called for under this program.

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IV. CONCLUSION

NERC respectfully requests that FERC accept this informational filing for the fourth quarter of 2010 in accordance with FERC's directive that NERC provide information regarding the time it takes to restore off-site power sources to nuclear power plants following a blackout as determined by drills and simulations. Additionally, NERC requests that FERC terminate the ongoing obligation to collect and file such data on the basis that new standards approved by FERC or pending FERC approval contain more explicit instructions regarding expectations of the Transmission Operators for restoring off-site power sources to nuclear power plants following a service interruption

Respectfully submitted,

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/s/ Holly Hawkins

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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 28th day of November, 2010.

/s/ Holly A. Hawkins _____
Holly A. Hawkins
*Attorney 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**

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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.

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

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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.

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 Adamsch". The signature is written in dark ink on a light-colored background.

Enclosure

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

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**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: 4th Quarter 2010