



April 13, 2011

**VIA ELECTRONIC FILING**

David Erickson  
President and Chief Executive Officer  
Alberta Electric System Operator  
2500, 330 – 5 Avenue SW  
Calgary, Alberta  
T2P 0L4

Re: *North American Electric Reliability Corporation*

Dear Mr. Erickson:

The North American Electric Reliability Corporation (“NERC”) hereby submits this Notice of Filing of a proposed modification to the definition of Protection System.

The term Protection System is currently defined in the Glossary of Terms Used in NERC Reliability Standards. The proposed modification to the Glossary of Terms Used in Reliability Standards was approved by the NERC Board of Trustees during its November 19, 2010 meeting. NERC requests effective dates as follows:

- Each responsible entity (Distribution Provider that owns a transmission Protection System, Transmission Owner, and Generator Owner) shall modify its protection system maintenance and testing program description and basis document(s) (required in Requirement R1 of PRC-005-1 – Transmission and Generation Protection System Maintenance and Testing) as necessary to reflect the modified

definition of “Protection System” by the first day of the first calendar quarter twelve months following the appropriate regulatory approvals.

- Each responsible entity shall implement any additional maintenance and testing (required in Requirement R2 of PRC-005-1 – Transmission and Generation Protection System Maintenance and Testing) by the end of the first complete maintenance and testing cycle described in the entity’s program description and basis document(s) following establishment of any program changes resulting from the revised definition.
- The original definition of “Protection System” shall be retired at the same time the revised definition becomes effective.

This notice consists of the following:

- this transmittal letter;
- a table of contents for the entire notice;
- a narrative description explaining how the proposed modification to the Glossary of Terms Used in NERC Reliability Standards improves reliability;
- Modification to the definition of Protection System and associated Implementation Plan (**Exhibit A**);
- the complete development record of the proposed modification to the definition of Protection System (**Exhibit B**); and
- the Standard Drafting Team Roster (**Exhibit C**).

NERC understands the AESO may adopt the proposed modification to the definition of Protection System subject to Alberta legislation, principally as established in the *Transmission Regulation* (“the T Reg”). Briefly, it is NERC’s understanding that the T Reg. requires the following with regard to the adoption in Alberta of a NERC

Reliability Standard:

1. The AESO must consult with those market participants that it considers are likely to be directly affected.

2. The AESO must forward the proposed reliability standards to the Alberta Utilities Commission for review, along with the AESO's recommendation that the Commission approve or reject them.

3. The Commission must follow the recommendation of the AESO that the Commission approve or reject the proposed reliability standards unless an interested person satisfies the Commission that the AESO's recommendation is "technically deficient" or "not in the public interest."

Further, NERC has been advised by the AESO that the AESO practice with respect to the adoption of a NERC Reliability Standard includes a review of the NERC Reliability Standard for applicability to Alberta legislation and electric industry practice. NERC has been advised that, while the objective is to adhere as closely as possible to the requirements of the NERC Reliability Standard, each NERC Reliability Standard approved in Alberta (called an "Alberta reliability standard") generally varies from the similar and related NERC Reliability Standard.

NERC requests the AESO consider the attached proposed modification to the definition of Protection System for adoption in Alberta as an "Alberta reliability standard(s)", subject to the required procedures and legislation of Alberta.

Please contact the undersigned if you have any questions.

Respectfully submitted,

/s/ Andrew M. Dressel  
Andrew M. Dressel

*Attorney for North American Electric  
Reliability Corporation*

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**BEFORE THE  
ALBERTA ELECTRIC SYSTEM OPERATOR**

**NORTH AMERICAN ELECTRIC )  
RELIABILITY CORPORATION )**

**NOTICE OF FILING OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION  
OF A PROPOSED MODIFICATION  
TO THE GLOSSARY OF TERMS USED IN RELIABILITY STANDARDS  
DEFINITION OF “PROTECTION SYSTEM”**

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April 13, 2011

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## **I. INTRODUCTION**

The North American Electric Reliability Corporation (“NERC”) hereby provides notice of a modification to the definition of Protection System.

On November 19, 2010, the NERC Board of Trustees approved the proposed modifications to the definition of “Protection System.”

Each responsible entity subject to PRC-005-1,<sup>1</sup> or any successive Reliability Standard, shall modify its protection system maintenance and testing program description and basis document(s) - required by Requirement R1 of the standard - as necessary to reflect the revised definition of “Protection System” by the first day of the first calendar quarter twelve months following the appropriate regulatory approvals. Each responsible entity shall implement any new or additional maintenance and testing - required in Requirement R2 - by the end of the first complete maintenance and testing cycle described in the entity’s program description and basis document(s) following establishment of any program changes resulting from the revised definition.

NERC filed the proposed modifications to the Reliability Standards contained herein with the Federal Energy Regulatory Commission (“FERC”), and is also filing the proposed modifications to the Reliability Standards contained herein with the other applicable governmental authorities in Canada.

**Exhibit A** to this filing sets forth the proposed modification to the definition of Protection System and its associated Implementation Plan. **Exhibit B** contains the

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<sup>1</sup> This includes any Distribution Provider that owns a transmission Protection System, Transmission Owner, or Generator Owner. NERC Standard PRC-005-1 - Transmission and Generation Protection System Maintenance and Testing – Section A.4, Applicability.

complete record of development for the proposed modification to the definition of Protection System. **Exhibit C** includes the Standard Drafting Team roster.

## **II. NOTICES AND COMMUNICATIONS**

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

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## **III. BACKGROUND**

### **a. Basis of Proposed Modifications to the Glossary of Terms Used in NERC Reliability Standards**

The modified definition proposed in this filing serves to close a reliability gap created by an omission in the current definition of "Protection System." The current definition for Protection System includes "Protective relays, associated communication systems, voltage and current sensing devices, station batteries and DC control circuitry,"<sup>2</sup> but does not include battery chargers. Battery chargers function to assure that batteries used to operate protection systems are in a continuous state of readiness and are therefore

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<sup>2</sup> NERC Glossary of Terms Used in Reliability Standards (2010). Available at: [http://www.nerc.com/docs/standards/rs/Glossary\\_of\\_Terms\\_2010April20.pdf](http://www.nerc.com/docs/standards/rs/Glossary_of_Terms_2010April20.pdf).

an essential piece of the bulk power system that should be included in the definition.

Problems with battery chargers have been contributing causes to disturbances on the bulk power system in the past.

The proposed definition improves understanding by clearly identifying the essential elements that constitute a Protection System, with the intention that there be no gaps and the concept of “system” (end to end) is considered in the application of the requirements referencing the defined term.

The definition states:

“Protection System –

- Protective relays which respond to electrical quantities,
- Communications systems necessary for correct operation of protective functions,
- Voltage and current sensing devices providing inputs to protective relays,
- Station dc supply associated with protective functions (including station batteries, battery chargers, and non-battery-based dc supply), and
- Control circuitry associated with protective functions through the trip coil(s) of the circuit breakers or other interrupting devices.”

#### **b. Reliability Standards Development Procedure**

NERC develops Reliability Standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC *Standard Processes Manual*, which is incorporated into the Rules of Procedure as Appendix 3A. NERC’s rules provide for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing Reliability Standards.

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 requires an affirmative vote of the stakeholders and the NERC Board of



Trustees to approve a Reliability Standard for submission to the applicable governmental authority.

The work that culminates in this filing originated in 2009 when NERC received a Request For Interpretation (RFI) from the Compliance Monitoring Processes Working Group (CMPWG) regarding Reliability Standard PRC-005-1 — Transmission and Generation Protection System Maintenance and Testing, Requirement 1.<sup>3</sup> The RFI was assigned to the standard drafting team for Project 2007-17 Protection System Maintenance and Testing. The interpretation was developed, balloted and approved by stakeholders in August, 2009, and approved by the NERC Board of Trustees (BOT) on November 5, 2009 with the acknowledgement that there was a reliability gap within the definition of "Protection System."

At its November 5, 2009 meeting, the BOT directed that the work close this reliability gap be made a priority because it posed a significant risk to the reliability of the bulk power system. Subsequently, at a January 2010 meeting, the NERC Standards Committee directed the standard drafting team for Project 2007-17 Protection System Maintenance and Testing to develop a revised definition of "Protection System" in parallel with the development of PRC-005-2 —Protection System Maintenance. The development history for the definition included in this filing focuses on the standard drafting team's activities since January 2010.

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<sup>3</sup> NERC Standard PRC-005-1 - Transmission and Generation Protection System Maintenance and Testing - Requirement R1 states, "Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES."

The proposed definition set out in **Exhibit A** has been developed and approved by industry stakeholders using NERC's *Reliability Standards Development Procedure*. A narrative of this process appears in section IV below.

**IV. DEVELOPMENT OF PROPOSED MODIFICATIONS TO THE GLOSSARY OF TERMS USED IN RELIABILITY STANDARDS**

At their January 2010 meeting, the NERC Standards Committee directed the standard drafting team for Project 2007-17 Protection System Maintenance and Testing to advance a revised definition of "Protection System" in parallel with the development of PRC-005-2 —Protection System Maintenance. This development history for the definition will focus on the standard drafting team's activities since January 2010 which is as follows:

- The Protection System Maintenance and Testing standard drafting team posted the definition and Reliability Standard separately for concurrent comment and ballot periods on June 11, 2010.
- The ballot period ended July 17, 2010 with the definition receiving a 39.35% approval vote.
- The Protection System Maintenance and Testing standard drafting team addressed the stakeholder comments, and the definition was posted for a 10-day recirculation ballot on July 23, 2010. The revised definition received a 58.61% approval vote.
- In August, 2010 the standard drafting team addressed the stakeholder comments, and the fourth draft of the definition was posted for a 30-day successive comment/ballot period that ended October 14, 2010. The definition received an 84.52% approval vote.

- The Protection System Maintenance and Testing standard drafting team addressed the stakeholder comments and the definition was posted for a 10-day recirculation ballot that ended on November 11, 2010. The definition received an 86.83% approval vote from the registered ballot body and was approved by the NERC Board of Trustees on November 19, 2010.

The complete development record for the proposed modifications to the definition of Protection System is provided in **Exhibit B** and includes the development and approval process, comments received during the industry-wide comment period NERC conducted on the proposed modifications, responses to those comments, ballot information, and NERC's evaluation of the proposed modifications.

## V. CONCLUSION

NERC requests that the AESO take the steps necessary to adopt the proposed modifications to the Glossary of Terms Used in Reliability Standards and the proposed effective dates, as set forth in this filing.

Respectfully submitted,

/s/ Holly A. Hawkins

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## **Exhibits A - C**

(Available on the NERC Website at

[http://www.nerc.com/fileUploads/File/Filings/Attachments\\_Definition\\_Protection\\_System.pdf](http://www.nerc.com/fileUploads/File/Filings/Attachments_Definition_Protection_System.pdf)