

May 13, 2016

**VIA ELECTRONIC FILING**

Rachelle Verret Morphy  
Saskatchewan Electric Reliability Authority  
2025 Victoria Avenue  
Regina, Saskatchewan, Canada S4P 0S1

RE: *North American Electric Reliability Corporation*

Dear Ms. Morphy:

The North American Electric Reliability Corporation (“NERC”) hereby submits Notice of Filing of the North American Electric Reliability Corporation of the Revised Definition of Special Protection System. NERC requests, to the extent necessary, a waiver of any applicable filing requirements with respect to this filing.

Please contact the undersigned if you have any questions.

Respectfully submitted,

/s/ Holly A. Hawkins

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*Associate General Counsel for the North  
American Electric Reliability Corporation*

Enclosure

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**BEFORE THE  
CROWN INVESTMENT CORPORATION  
OF THE PROVINCE OF SASKATCHEWAN**

**NORTH AMERICAN ELECTRIC )  
RELIABILITY CORPORATION )**

**NOTICE OF FILING OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION OF THE REVISED  
DEFINITION OF SPECIAL PROTECTION SYSTEM**

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May 13, 2016

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**BEFORE THE  
CROWN INVESTMENT CORPORATION  
OF THE PROVINCE OF SASKATCHEWAN**

**NORTH AMERICAN ELECTRIC )  
RELIABILITY CORPORATION )**

**NOTICE OF FILING OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION OF THE REVISED  
DEFINITION OF SPECIAL PROTECTION SYSTEM**

The North American Electric Reliability Corporation (“NERC”) hereby submits a proposed revised definition of the term “Special Protection System” (“SPS”) in the NERC *Glossary of Terms Used in Reliability Standards* (“NERC Glossary”).<sup>1</sup> As explained in more detail below, the proposed definition represents an improvement over the existing definition as it completes the transition from the term “Special Protection System” to “Remedial Action Scheme” that was initiated by NERC in 2014.

The proposed definition (**Exhibit A**), the retirement of the existing definition of SPS, and the associated Implementation Plan (**Exhibit B**) are just, reasonable, not unduly discriminatory or preferential, and in the public interest. The following filing contains a summary of the development of the proposed definition and the technical basis and purpose of the proposed definition (“Filing”). The NERC Board of Trustees approved the proposed definition of the NERC Glossary term “Special Protection System” on May 5, 2016.

**I. NOTICES AND COMMUNICATIONS**

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

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<sup>1</sup> Unless otherwise designated, all capitalized terms shall have the meaning set forth in the NERC Glossary, available at [http://www.nerc.com/files/Glossary\\_of\\_Terms.pdf](http://www.nerc.com/files/Glossary_of_Terms.pdf)

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## **II. BACKGROUND**

### **A. NERC Reliability Standards Development Procedure**

The proposed definition of SPS was developed in an open and fair manner and in accordance with the Reliability Standard development process. NERC develops Reliability Standards and associated NERC Glossary definitions in accordance with Section 300 (Reliability Standards Development) and Appendix 3D (NERC Standard Processes Manual) of the NERC Rules of Procedure.<sup>2</sup>

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 satisfy certain of the criteria for approving 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 stakeholders must approve, and the NERC Board of Trustees must adopt a Reliability Standard before NERC submits the Reliability Standard to the Commission for approval.

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<sup>2</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).

## **B. Procedural History**

In Order No. 693, the Federal Energy Regulatory Commission (“FERC”) approved, among other things, the NERC Glossary, which included definitions for the terms “Special Protection System” and “Remedial Action Scheme.”<sup>3</sup> As these terms were used interchangeably across Interconnections and the ERO Regions, NERC designed the definitions approved in Order No. 693 to ensure that both terms could be used in reference to the same equipment. The NERC Glossary defines an SPS as:

An automatic protection system designed to detect abnormal or predetermined system conditions, and take corrective actions other than and/or in addition to the isolation of faulted components to maintain system reliability. Such action may include changes in demand, generation (MW and Mvar), or system configuration to maintain system stability, acceptable voltage, or power flows. An SPS does not include (a) underfrequency or undervoltage load shedding or (b) fault conditions that must be isolated or (c) out-of-step relaying (not designed as an integral part of an SPS). Also called Remedial Action Scheme.

The NERC Glossary definition for RAS is a cross-reference to the definition of the term “Special Protection System” and reads: “See ‘Special Protection System.’” After several years’ experience and based on industry input, NERC initiated Project 2010-05 in early 2010 to address issues associated with RAS and SPS, including the inconsistent usage of these terms across Interconnections and NERC Regions.

Project 2010-05 was designed with the goal of “improving the monitoring of Bulk Electric System Protection System events and of identifying and correcting the causes of Misoperations to improve Protection System performance.”<sup>4</sup> Based on industry input, NERC subdivided the work in Project 2010-05 into two phases, Project 2010-05.1 and Project 2010-05.2, to address issues associated with misoperations of Protection Systems before addressing

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<sup>3</sup> See *Mandatory Reliability Standards for the Bulk-Power System*, Order No. 693, FERC Stats. & Regs. ¶ 31,242, *order on reh’g*, Order No. 693-A, 120 FERC ¶ 61,053 (2007).

<sup>4</sup> *Notice of Filing of the North American Electric Reliability Corporation of Revisions to the Definition of “Remedial Action Scheme” and Proposed Reliability Standards* (“RAS Petition”), at p. 10 (filed Feb. 25, 2015).

alignment of the terms “Special Protection Systems” and “Remedial Action Schemes.” The work in Project 2010-05.1 culminated in the development of proposed Reliability Standard PRC-004-3 (Protection System Misoperation Identification and Correction) and the proposed revised definition of “Misoperations.” On September 23, 2014, NERC submitted proposed Reliability Standard PRC-004-3 (Protection System Misoperation Identification and Correction) and the NERC Glossary definition for Misoperations to the Commission in Docket No. RD14-14-000.<sup>5</sup>

NERC further divided Project 2010-05.2 into two projects related to SPS and RAS. The scope of these projects, Project 2010-05.2 and Project 2010-05.3, was to revise the definition of RAS and to develop a Reliability Standard addressing issues associated with RAS. First, NERC began its effort to improve the identification and assessment of SPS and RAS in Project 2010-05.2 based on the findings of a System Protection and Control Subcommittee (“SPCS”) Technical Report titled “Special Protection Systems (SPS) and Remedial Action Schemes (RAS): Assessment of Definition, Regional Practices, and Application of Related Standards” (“SPCS/SAMS Report”).<sup>6</sup> The SPCS/SAMS Report noted the lack of clarity of the definition of SPS, the inconsistent use of the terms “Special Protection System” and “Remedial Action Scheme” across the eight Regions, and the impact this inconsistent usage would have on identification.<sup>7</sup> Using the information in the SPCS/SAMS Report, the standard drafting team for Project 2010-05.2 developed an improved, revised definition of RAS with more detail than the existing definition of SPS, including a refined core definition and specific inclusions and exclusions.

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<sup>5</sup> Notice of Filing of the North American Electric Reliability Corporation of Proposed Reliability Standard PRC-004-3, (filed Sept. 23, 2014).

<sup>6</sup> See RAS Filing, *supra* n. 19, Exhibit G (SPCS Technical Report).

<sup>7</sup> *Id.*

The revised definition more precisely describes the function of a RAS, states the relationship between Protection Systems and RAS, and “clarifies that a centrally controlled undervoltage-based load shedding is included in the definition.”<sup>8</sup> The drafting team developed the revised definition of the term “Remedial Action Scheme” to improve identification of this equipment and move to the use of a single defined term and eventual elimination of the redundant term “Special Protection System.” NERC submitted the revised definition and several associated Reliability Standards, which NERC revised to effectuate the transition to the term “Remedial Action Scheme,” on February 25, 2015. FERC approved the revised definition of RAS and associated Reliability Standards on November 19, 2015 in Order No. 818.<sup>9</sup>

In 2015, NERC initiated development in Project 2010-05.3 to address all aspects of RAS and SPS contained in the RAS/SPS-related Reliability Standards. Project 2010-05.3 concluded in the development of one new Reliability Standard, Reliability Standard PRC-012-2 (Remedial Action Schemes), which combined several unapproved standards that the Commission deemed “fill-in-the-blank” standards in Order No. 693. Given FERC’s approval of the revised definition of RAS in late 2015, NERC also developed a revised definition of SPS in Project 2010-05.3, which is the subject of this filing. NERC will submit the related proposed Reliability Standard PRC-012-2 in a separate filing so that the revised definition can be acted on independently of PRC-012-2 and before the implementation of the revised definition of RAS on April 1, 2017.

The proposed definition of SPS and the associated implementation plan were posted for a 45-day formal comment period from November 25, 2015 through January 8,

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<sup>8</sup> RAS Filing, *supra* n. 19, p. 14.

<sup>9</sup> *Revisions to Emergency Operations Reliability Standards; Revisions to Undervoltage Load Shedding Reliability Standards; Revisions to the Definition of “Remedial Action Scheme” and Related Reliability Standards*, Order No. 818, 153 FERC ¶ 61,228 (2015).



2016, with an initial ballot held from December 30, 2015 through January 8, 2016. The initial ballot reached quorum at 80.88% of the ballot pool with 92.94% approval.<sup>10</sup> The proposed definition and implementation plan were posted for a 10-final ballot period from April 20, 2016 through April 29, 2016. The final ballot reached quorum at 87.15% of the ballot pool and received sufficient affirmative votes for approval, including support from 93.43% of the voters.<sup>11</sup> The NERC Board of Trustees approved the proposed definition and associated implementation plan on May 5, 2016.

### **III. JUSTIFICATION**

#### **A. Proposed Definition of Special Protection System**

As noted above, NERC submitted a proposed revised definition of RAS on February 25, 2015 as an improvement on the currently effective definition to add clarity and granularity and ensure proper identification of RAS.<sup>12</sup> During development of that definition, NERC acknowledged that certain currently effective Reliability Standards and associated documents continued to use the terms “Remedial Action Scheme” and “Special Protection System” interchangeably. In consideration of this outstanding inconsistent usage, NERC did not request retirement of the current definition of SPS concurrently with implementation of the revised definition of RAS. Rather, NERC submitted the revised definition of RAS for approval and retained the existing definition for SPS until approval of the revised definition of RAS. FERC

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<sup>10</sup> NERC, *Consideration of Comments*, Project 2010-05.3, (Feb. 3, 2016), *available at* [http://www.nerc.com/pa/Stand/Prjct201005\\_3RmdialActnSchmsPhase3ofPrctnSystmsDL/2010-05\\_3\\_RAS\\_PRC-012-2\\_C\\_of\\_C\\_02032016.pdf](http://www.nerc.com/pa/Stand/Prjct201005_3RmdialActnSchmsPhase3ofPrctnSystmsDL/2010-05_3_RAS_PRC-012-2_C_of_C_02032016.pdf).

<sup>11</sup> NERC, *Standards Announcement*, Project 2010-05.3, *available at* [http://www.nerc.com/pa/Stand/Prjct201005\\_3RmdialActnSchmsPhase3ofPrctnSystmsDL/2010-05.3\\_PRC-012-2\\_FB\\_Results\\_Word\\_Announce\\_05032016.pdf](http://www.nerc.com/pa/Stand/Prjct201005_3RmdialActnSchmsPhase3ofPrctnSystmsDL/2010-05.3_PRC-012-2_FB_Results_Word_Announce_05032016.pdf).

<sup>12</sup> RAS Filing, *supra*, n. 19.

approved the revised definition of RAS on November 19, 2015.<sup>13</sup> The revised definition will become effective on April 1, 2017.<sup>14</sup>

NERC intends to continue its efforts to revise all Reliability Standards and associated documents to remove reference to the outdated term “Special Protection System” and replace this term with the term “Remedial Action Scheme.” This transition to use of a single term will occur over time, and when complete, it will reduce confusion and will ensure proper identification of RAS. During this transition to a single term, however, NERC recognizes that several existing Reliability Standards and associated documentation continue to reference the outdated term “Special Protection System” to refer to elements of the Bulk Electric System that NERC has now defined as RAS. As FERC has now approved the revised definition of RAS, any reference to the term “Special Protection System” after implementation of the revised definition will invoke an outdated definition and may cause confusion or inconsistent identification of RAS.

Given FERC approval of the revised definition of RAS and the continued, inconsistent usage the terms “Remedial Action Scheme” and “Special Protection System,” NERC has revised the definition of SPS to refer to the revised definition for RAS. This proposed definition, which states “See Remedial Action Scheme,” will ensure that any reference to either SPS or RAS refers to the revised definition of RAS approved by FERC on November 19, 2015.

#### **IV. EFFECTIVE DATE**

The proposed, revised definition of SPS will become effective pursuant to the the Implementation Plan for the revised definition of SPS, attached in **Exhibit B** of this Petition. As

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<sup>13</sup> See, *supra*, n. 25.

<sup>14</sup> See RAS Filing, *supra* n. 19, Exhibit C (Implementation Plan).

explained in the Implementation Plan, the proposed effective date is “on the later of the effective date of the applicable governmental authority’s order approving the revised definition of Special Protection System or the effective date of the revised definition of Remedial Action Scheme approved by the Commission on November 19, 2015. Where approval by an applicable governmental authority is not required, the revised definition of Special Protection System shall become effective on the later of the day that it is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction, or the effective date of the revised definition of Remedial Action Scheme as approved by the Commission on November 19, 2015.” The proposed effective date ensures that all references to either term in NERC or Regional Entity documents invoke the revised definition of RAS approved by FERC on November 19, 2015.

Respectfully submitted,

/s/ Andrew C. Wills

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Date: May 13, 2016

**Exhibit A**

**Revised Definition of Special Protection Systems (SPS)**

## Revised Definition of “Special Protection System”

### *Special Protection System (SPS)*

#### **Background**

In Order No. 693, the Commission approved, among other things, the *Glossary of Terms Used in NERC Reliability Standards* (“NERC Glossary”), which included NERC’s currently effective definitions of Special Protection System and Remedial Action Scheme. The NERC Glossary currently defines a Special Protection System as:

An automatic protection system designed to detect abnormal or predetermined system conditions, and take corrective actions other than and/or in addition to the isolation of faulted components to maintain system reliability. Such action may include changes in demand, generation (MW and Mvar), or system configuration to maintain system stability, acceptable voltage, or power flows. An SPS does not include (a) underfrequency or undervoltage load shedding or (b) fault conditions that must be isolated or (c) out-of-step relaying (not designed as an integral part of an SPS). Also called Remedial Action Scheme.

The currently effective NERC Glossary definition for “Remedial Action Scheme” is a cross-reference to the definition of Special Protection System and reads: “See ‘Special Protection System.’” This internal cross-reference from Remedial Action Scheme to Special Protection System in lieu of a separate definition was developed to ensure that the terms are used interchangeably even where entities or an interconnection uses one term versus the other.

On February 3, 2015, NERC submitted a petition for approval of a revised definition of “Remedial Action Scheme” to add clarity and to ensure proper identification of Remedial Action Schemes and a more consistent application of related Reliability Standards. As explained in the petition, “[t]he defined terms ‘Special Protection System’ and ‘Remedial Action Scheme’ are currently used interchangeably throughout the NERC Regions and in various Reliability Standards, including prior versions of the Proposed Reliability Standards.” Along with this proposed revised definition, NERC submitted revisions to various Reliability Standards by replacing the term “Special Protection System” and replacing it with the newly revised “Remedial Action Scheme.” As NERC stated, “use of only one term in the NERC Reliability Standards will ensure proper identification of these systems and application of related Reliability Standards.” The petition also anticipated future revision to the definition of “Special Protection System” to cross-reference the newly revised and proposed definition of “Remedial Action Scheme.” This coordination, which would be achieved by implementing the new definition of “Special Protection System” simultaneously with the Commission approval of the revised definition for “Remedial Action Scheme,” will ensure that all references to “Special Protection System” and “Remedial Action Scheme” refer to the same revised definition.

On June 18, 2015, the Commission issued a Notice of Proposed Rulemaking (“NOPR”) proposing to accept the revisions to the RAS definition and associated standards, and on November 19, 2015, the Commission issued a Final Order approving the RAS definition and associated standards.

## Revised Definition

*Special Protection System (SPS)*

See “Remedial Action Scheme”

**Exhibit B**

**Implementation Plan for SPS Definition**

# Implementation Plan for the Revised Definition of “Special Protection System”

Project 2010-05.3 – Remedial Action Scheme (RAS)

## Requested Approval

- Definition of “Special Protection System”

## Requested Retirement

- Existing definition of “Special Protection System”

## Background

In Order No. 693, the Commission approved, among other things, the Glossary of Terms Used in NERC Reliability Standards (“NERC Glossary”), which included NERC’s currently effective definitions of Special Protection System and Remedial Action Scheme. The NERC Glossary currently defines a Special Protection System as:

An automatic protection system designed to detect abnormal or predetermined system conditions, and take corrective actions other than and/or in addition to the isolation of faulted components to maintain system reliability. Such action may include changes in demand, generation (MW and Mvar), or system configuration to maintain system stability, acceptable voltage, or power flows. An SPS does not include (a) underfrequency or undervoltage load shedding or (b) fault conditions that must be isolated or (c) out-of-step relaying (not designed as an integral part of an SPS). Also called Remedial Action Scheme.

The currently effective NERC Glossary definition for “Remedial Action Scheme” is a cross-reference to the definition of Special Protection System and reads: “See ‘Special Protection System.’” This internal cross-reference from Remedial Action Scheme to Special Protection System in lieu of a separate definition was developed to ensure that the terms are used interchangeably even where entities or an interconnection uses one term versus the other.

On February 3, 2015, NERC submitted a petition for approval of a revised definition of “Remedial Action Scheme” developed by the standard drafting team Project 2010-05.2 (SPS SDT). As explained in the petition, “[t]he defined terms ‘Special Protection System’ and ‘Remedial Action Scheme’ are currently used interchangeably throughout the NERC Regions and in various Reliability Standards, including prior versions of the Proposed Reliability Standards.” In developing a solution for this inconsistency, the SPS SDT revised the definition of Remedial Action Scheme to incorporate a higher level of specificity for schemes that are appropriately considered Remedial Action Schemes, to provide more consistent identification of Remedial Action Schemes across the NERC Regions, and to state the relationship between Protection Systems and Remedial Action Schemes. NERC also submitted revisions to various



Reliability Standards by replacing the term “Special Protection System” with the newly revised “Remedial Action Scheme.” As NERC stated, the “use of only one term in the NERC Reliability Standards will ensure proper identification of these systems and application of related Reliability Standards.”

On June 18, 2015, the Commission issued a Notice of Proposed Rulemaking (“NOPR”) proposing to accept the revisions to the RAS definition and associated standards, and on November 19, 2015, the Commission issued a Final Order approving the RAS definition and associated standards.

### **General Considerations**

The petition for revisions to the Definition of “Remedial Action Scheme” and related Reliability Standards also anticipated revision of the definition of “Special Protection System” to cross-reference the newly revised definition of “Remedial Action Scheme.” Coordination of the two terms was completed by the SPS SDT in this phase of the Project (Project 2010-05.3) and will implement the new definition of “Special Protection System” simultaneously with the effective date of the revised definition for “Remedial Action Scheme.” By assigning simultaneous effective dates of the revised definition of “Special Protection System” and “Remedial Action Scheme,” all references to either term in NERC or Regional Entity documents will refer to the same NERC Glossary definition.

### **Effective Dates**

Where approval by an applicable governmental authority is required, the revised definition of Special Protection System shall become effective on the later of the effective date of the applicable governmental authority’s order approving the revised definition of Special Protection System or the effective date of the revised definition of Remedial Action Scheme approved by the Commission on November 19, 2015.

Where approval by an applicable governmental authority is not required, the revised definition of Special Protection System shall become effective on the later of the day that it is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction, or the effective date of the revised definition of Remedial Action Scheme as approved by the Commission on November 19, 2015.

### **Retirement**

The currently effective definition of Special Protection System shall be retired immediately prior to the effective date of the revised definition of Special Protection System in the particular jurisdiction in which the definition is becoming effective.

**Exhibit C**  
**Drafting Team Roster**

## Standard Drafting Team Roster

Project 2010-05.3 Phase 3 of Protection Systems: Remedial Action Schemes (RAS)

	Participant	Entity
<b>Chair</b>	Gene Henneberg	NV Energy / Mid-American
<b>Vice Chair</b>	Bobby Jones	Southern Company
<b>Members</b>	Amos Ang	Southern California Edison
	Alan Engelmann	ComEd / Exelon
	Davis Erwin	Pacific Gas and Electric
	Sharma Kolluri	Entergy
	Charles-Eric Langlois	Hydro-Quebec TransEnergie
	Robert J. O'Keefe	American Electric Power
	Hari Singh	Xcel Energy
<b>PMOS Liaison</b>	Rod Kinard	Oncor Electric Delivery
<b>NERC Staff</b>	Al McMeekin – Senior Standards Developer	North American Electric Reliability Corporation
	Lacey Ourso – Standards Developer (Support)	North American Electric Reliability Corporation
	Andrew Wills – Associate Counsel	North American Electric Reliability Corporation