

March 22, 2018

**VIA ELECTRONIC FILING**

Mr. Patrick Wruck, Commission Secretary  
British Columbia Utilities Commission  
Box 250, 900 Howe Street  
Sixth Floor  
Vancouver, B.C.  
V6Z 2N3

Re: *North American Electric Reliability Corporation*

Dear Mr. Wruck:

The North American Electric Reliability Corporation hereby submits Notice of Filing of the North American Electric Reliability Corporation of Retirement of Regional Reliability Standard PRC-004-WECC-2. 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 concerning this filing.

Respectfully submitted,

/s/ Shamai Elstein

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*Senior Counsel for the North American Electric  
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Enclosure

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**BEFORE THE  
BRITISH COLUMBIA UTILITIES COMMISSION  
OF THE PROVINCE OF BRITISH COLUMBIA**

**NORTH AMERICAN ELECTRIC )  
RELIABILITY CORPORATION )**

**NOTICE OF FILING OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION OF RETIREMENT  
OF REGIONAL RELIABILITY STANDARD PRC-004-WECC-2**

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March 22, 2018

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NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION OF RETIREMENT  
OF REGIONAL RELIABILITY STANDARD PRC-004-WECC-2**

The North American Electric Reliability Corporation (“NERC”) respectfully provides notice of the retirement of WECC Regional Reliability Standard PRC-004-WECC-2 - Protection System and Remedial Action Scheme Misoperation.

The purpose of Regional Reliability Standard PRC-004-WECC-2 is to ensure that all transmission and generation Protection System<sup>1</sup> and Remedial Action Scheme misoperations on applicable transmission paths and Remedial Action Schemes are analyzed and/or mitigated. Since the initial development of this regional standard, other continent-wide Reliability Standards have been developed that have made the requirements of this regional Reliability Standard redundant and no longer necessary for reliability in the Western Interconnection. Therefore, the retirement of the regional standard will have no adverse effect on reliability and is in the public interest.

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<sup>1</sup> Unless otherwise designated, capitalized terms shall have the meaning set forth in the *Glossary of Terms Used in NERC Reliability Standards* (“NERC Glossary of Terms”), [http://www.nerc.com/files/Glossary\\_of\\_Terms.pdf](http://www.nerc.com/files/Glossary_of_Terms.pdf).

## **I. NOTICES AND COMMUNICATIONS**

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

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## **II. BACKGROUND**

### **A. Regulatory Framework**

A regional difference from a continent-wide Reliability Standard must either be: (1) more stringent than the continent-wide Reliability Standard (which includes a regional standard that addresses matters that the continent-wide Reliability Standard does not), or (2) necessitated by a physical difference in the BPS. Due weight is given to the technical expertise of a Regional Entity, like WECC, that is organized on an Interconnection-wide basis with respect to a Regional Reliability Standard applicable within that Interconnection.

WECC Reliability Standards are intended to apply only to registered entities in the Western Interconnection. WECC develops Regional Reliability Standards in accordance with its *Reliability Standards Development Procedures* (“RSDP”).<sup>2</sup> Proposed WECC Regional Reliability Standards are subject to approval by NERC, as the ERO, and the applicable governmental authorities.

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<sup>2</sup> The currently-effective WECC RSDP is available at [http://www.nerc.com/FilingsOrders/us/Regional%20Delegation%20Agreements%20DL/WECC%20RSDP\\_20171027.pdf](http://www.nerc.com/FilingsOrders/us/Regional%20Delegation%20Agreements%20DL/WECC%20RSDP_20171027.pdf).

## **B. Procedural History**

This section provides a discussion of the development and approval of WECC Regional Reliability Standard PRC-004-WECC-2, as well as an overview of the standard development process for the proposed retirement of the regional standard.

### 1. Development and Approval of the WECC Regional Reliability Standard

On June 8, 2007, the Federal Energy Regulatory Commission (“FERC”) approved WECC Regional Reliability Standards WECC-PRC-STD-001-1 (Certification of Protective Relay Applications and Settings) and WECC-PRC-STD-003-1 (Protective Relay and Remedial Action Scheme Misoperation) as mandatory and enforceable Reliability Standards for registered entities within the Western Interconnection.<sup>3</sup> Regional standard WECC-PRC-STD-001-1 required applicable Transmission Operators and Transmission Owners to certify that all protective relay applications for BPS transmission paths in the Western Interconnection are appropriate, that all relay operations have been analyzed for correctness, and that appropriate corrective action has been taken. Regional standard WECC-PRC-STD-003-1 required owners of protective relays and Remedial Action Schemes for specified paths to analyze and prepare mitigation steps in response to known or probable relay misoperations. WECC developed the predecessors to these standards following two July 1996 system disturbances.

On April 7, 2009, NERC submitted WECC Regional Reliability Standard PRC-004-WECC-1 (Protection System and Remedial Action Scheme Misoperation) to replace the two WECC PRC standards. On February 25, 2015, NERC submitted the currently-effective standard, PRC-004-WECC-2. This version of the standard was developed as part of NERC’s efforts to

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<sup>3</sup> *Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications*, 119 FERC ¶ 61,260 (2007).

incorporate a new definition of Remedial Action Scheme and eliminate use of the term Special Protection System.

## 2. Summary of PRC-004-WECC-2 Retirement History

In October 2016, a regional Standard Authorization Request (“SAR”) was submitted to perform a five-year review of WECC Regional Reliability Standard PRC-004-WECC-2 in accordance with the periodic review requirements of the WECC RSDP. The SAR was approved by the WECC Standards Committee on December 6, 2016.

WECC initiated Project WECC-0126 to review the regional standard. The standard drafting team for this project recommended that it be retired for the reasons explained in the following section and in Exhibit A. In accordance with the WECC RSDP, the proposed retirement of PRC-004-WECC-2 was posted for a 45-day comment period from April 6, 2017 through May 22, 2017. The WECC Standards Committee approved the request for ballot by the WECC Ballot Pool on July 6, 2017. The ballot pool was open from July 11, 2017 through July 26, 2017, and the final ballot was held from August 9, 2017 through August 28, 2017. The proposed retirement achieved an 89.1% quorum and 98.2% approval.

In accordance with Section 312 of NERC’s Rules of Procedure, NERC posted the proposed retirement of PRC-004-WECC-2 for a 45-day comment period from November 3, 2017 through December 18, 2017. Commenters agreed that WECC’s process was open, inclusive, balanced, transparent, and that due process was followed. The WECC Board of Directors approved the retirement of PRC-004-WECC-2 on December 6, 2017. The NERC Board of Trustees approved the retirement on February 8, 2018.

### **III. JUSTIFICATION FOR RETIREMENT**

The purpose of Regional Reliability Standard PRC-004-WECC-2 is to ensure that all transmission and generation Protection System and Remedial Action Scheme misoperations on

applicable transmission paths and Remedial Action Schemes are analyzed and/or mitigated. The language that would later become the regional standard was originally developed in response to two System disturbances occurring within the Western Interconnection in the summer of 1996. These two disturbances, which both started with the same 345 kV line flashing to a tree, involved misoperations on the same element within a single 24-hour period.<sup>4</sup> Following these disturbances, WECC determined that if a misoperation could be analyzed and the equipment promptly removed from service, then system operators could remedy the cause before an iterative misoperation took place.

In the intervening years, NERC developed continent-wide Reliability Standards which address not only the precipitating cause of these two 1996 disturbances but also the reliability goals of the regional standard relating to Protection Systems and Remedial Action Schemes. While the WECC regional standard applies only to a limited subset of WECC Remedial Action Schemes and Protective Systems, the continent-wide standards apply to Protection Systems and Remedial Action Schemes more generally.

This section provides a requirement-by-requirement discussion of how the reliability goals of the regional standard are addressed in the continent-wide Reliability Standards. Further detail is provided in Table A of the Technical Justification document attached to this petition as Exhibit A. In light of the strong protection these continent-wide standards provide for reliability, the WECC regional standard is no longer necessary for reliability in the Western Interconnection and should be retired.

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<sup>4</sup> See NERC, *1996 System Disturbances: Review of Electric System Disturbances in North America*, 31 (2002), <http://www.nerc.com/pa/rrm/ea/System%20Disturbance%20Reports%20DL/1996SystemDisturbance.pdf>.

**A. Continent-Wide Reliability Standard FAC-003-4 Addresses the Vegetation Management Causes that Originally Prompted the Development of the Regional Standard**

Continent-wide Reliability Standard FAC-003-4 – Transmission Vegetation Management addresses the vegetation management issues that initiated the 1996 disturbances which lead to the development of the regional standard.<sup>5</sup> The FAC-003-4 standard is applicable to Transmission Owners and Generator Owners that own certain transmission lines, including overhead transmission lines operated at 200 kV or higher and lines operated at under 200 kV if they have been identified as elements of a Major WECC Transfer Path. Reliability Standard FAC-003-4 requires, among other things, that vegetation be managed to prevent the type of encroachment encountered in 1996 (Requirements R1 and R2); that timely notification be made to the control center of vegetation conditions that could cause a Fault at any moment (Requirement R4); and that corrective action be taken to ensure that flashover distances will not be violated due to work constraints (R5).

**B. The WECC Regional Standard is Redundant to Continent-wide Standards Relating to Protection System and Remedial Action Scheme Performance and May be Retired with No Adverse Impact on Reliability**

1. PRC-004-WECC-2 Requirement R1 is Redundant to Continent-wide Reliability Standards

PRC-004-WECC-2 Requirement R1 requires an applicable entity's System Operators to review all tripping of transmission elements and Remedial Action Scheme operations to identify apparent misoperations within 24 hours, and the entity's system protection personnel to analyze all operations of Protection Systems and Remedial Action Schemes within 20-business days for

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<sup>5</sup> The purpose of the FAC-003-4 standard is "[t]o maintain a reliable electric transmission system by using a defense-in-depth strategy to manage vegetation located on transmission rights of way (ROW) and minimize encroachments from vegetation located adjacent to the ROW, thus preventing the risk of those vegetation-related outages that could lead to Cascading." This standard, as well as the other standards noted in this filing, are available at <http://www.nerc.net/standardsreports/standardssummary.aspx>.

correctness to determine whether a misoperation has occurred that may not have been identified by the System Operators.

This regional Requirement is redundant to those contained in continent-wide NERC Reliability Standards for Protection Systems and Remedial Action Schemes which contain rigorous requirements for Protection System and Remedial Action Scheme analysis. With respect to Protection Systems, Reliability Standard PRC-004-5(i) (Protection System Misoperation Identification and Correction) requires applicable entities to identify and correct the causes of misoperations of Protection Systems for Bulk Electric System Elements. Reliability Standard PRC-001.1.1(ii) (System Protection Coordination) requires applicable entities to be familiar with the purpose and limitations of the Protection Systems applied in its area and to take corrective actions to resolve equipment failures involving system reliability as soon as possible. Under Reliability Standard PRC-005-6 (Protection System, Automatic Reclosing, and Sudden Pressure Relaying Maintenance), entities are required to establish a testing and maintenance program for their Protection Systems and demonstrate efforts to correct Unresolved Maintenance Issues. Monitoring and situational awareness are addressed in PRC-001-1.1(ii) and TOP-003-3 (Operational Reliability Data).

With respect to Remedial Action Schemes, currently-effective Reliability Standard PRC-016-1 (Remedial Action Scheme Misoperations) requires entities owning Remedial Action Schemes to analyze their operations, keep a record of all misoperations, take corrective action to avoid future misoperations, and provide documentation of its activities to the Regional Reliability Organization and NERC upon request.<sup>6</sup> Reliability Standard PRC-017-1 (Remedial Action Scheme Maintenance and Testing) requires owners of Remedial Action Schemes to

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<sup>6</sup> Remedial Action Scheme analysis is also addressed in Reliability Standard PRC-012-2, which will become effective in 2021 and replace PRC-016-1. NERC submitted Reliability Standard PRC-012-2 on August 15, 2016.

implement a maintenance and testing program for their Remedial Action Schemes and to provide certain documentation to the Regional Reliability Organization and NERC upon request.

Additionally, and as described in more detail in Exhibit A, the continent-wide TOP standards require evaluation of system impacts for a given configuration at least every day so long as the facility continues in service with a single Protection System or Remedial Action Scheme and require entities to take further action if required by the circumstances. The timeframes provided in these standards are more rigorous than the 20-business day review requirement in PRC-004-WECC-2 Requirement R1.2.

Together, the continent-wide Reliability Standards described above provide greater detail for Protection System and Remedial Action Scheme analysis than provided in Requirement R1 of the PRC-004-WECC-2 standard. This regional standard requirement, which is now redundant to those contained in continent-wide Reliability Standards, may thus be retired with no adverse impact on reliability in the Western Interconnection.

2. PRC-004-WECC-2 Requirement R2 is Redundant to Continent-wide Reliability Standards

PRC-004-WECC-2 Requirement R2 is divided into two parts, one assigning tasks in the event of a Security-Based Misoperation<sup>7</sup> and the other assigning tasks in the event of a Dependability-Based Misoperation.<sup>8</sup> The requirement to analyze each misoperation attaches whenever the misoperation is discovered. If the Protection System misoperation is Security-

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<sup>7</sup> The WECC regional term Security-Based Misoperation is defined in the *Glossary of Terms Used in NERC Reliability Standards* as follows: “A Misoperation caused by the incorrect operation of a Protection System or [Remedial Action Scheme]. Security is a component of reliability and is the measure of a device’s certainty not to operate falsely.”

<sup>8</sup> The WECC regional term Dependability-Based Misoperation is defined in the *Glossary of Terms Used in NERC Reliability Standards* as follows: “Is the absence of a Protection System or [Remedial Action Scheme] operation when intended. Dependability is a component of reliability and is the measure of a device’s certainty to operate when required.”

Based, the Protection System or Remedial Action Scheme shall be removed from service within 22 hours of the identification of the misoperation. Whether the Protection System requires repair, removal, replacement, or modification is fact specific and subject to if/then statements in the standard. If the Protection System or Remedial Action Scheme misoperation is Dependability-Based, the Protection System or Remedial Action Scheme can remain in service so long as repair or replacement occurs within 20 days of the identification of the misoperation; otherwise, it must be removed from service.

Like Requirement R1, the reliability-related substance of this Requirement is adequately addressed in the continent-wide Reliability Standards. These standards provide a clear and flexible approach to maintaining reliability, as opposed to the rigid if/then approach prescribed in the WECC regional standard. Reliability Standard PRC-001-1.1(ii) Requirement R2 requires that if a protective relay or equipment failure reduces system reliability, then corrective action is to be taken as soon as possible. Likewise, Reliability Standard PRC-016-1 Requirement R2 requires the Remedial Action Scheme owner to take corrective actions to avoid future misoperations. Reliability Standard TOP-001-3 requires the Transmission Operator and Balancing Authority to maintain the reliability of their respective areas by their own actions (or by issuing Operating Instructions).

Through its analysis, WECC has determined that not only is the regional standard redundant to continent-wide requirements, application of the regional standard could lessen reliability in certain cases because it mandates a specific action without regard to outcome when an alternate action may be better for reliability. Additionally, WECC's analysis of the 22-hour timeline in PRC-004-WECC-2 Requirement R2.1 has indicated that, because the obligation is not triggered until after a misoperation is identified and such identification may take weeks to

occur, the requirement does not in fact provide a higher performance threshold than the continent-wide Reliability Standards. Lastly, WECC has concluded that the standard does not sufficiently define what are considered Protection Systems or Remedial Action Scheme actions “that appear to be entirely reasonable and correct” and thus exempt from the actions specified in Requirement R2 Parts 2.1 through 2.4.<sup>9</sup>

In conclusion, WECC has determined that the continent-wide requirements address the reliability goal of the regional standard and provide entities with the flexibility they need to take the actions that best serve reliability in light of all of the relevant circumstances. Therefore, the retirement of this regional standard Requirement is appropriate.

3. PRC-004-WECC-2 Requirement R3 is Administrative in Nature and May be Retired with No Adverse Impact on Reliability

PRC-004-WECC-2 Requirement R3 requires applicable entities to submit misoperation incident reports to WECC within 10 days of identifying a Protection System or Remedial Action Scheme misoperation or completing repairs or replacement of the equipment that misoperated. As the requirement requires only a report be presented, with no further guidance on the contents of the report or additional analysis to be made, WECC has determined that the requirement is administrative in nature and redundant to other standards, and its retirement would not negatively impact the reliability of the BPS. As noted above, other NERC Reliability Standards address analysis of Protection System and Remedial Action Scheme misoperations. To the extent the data collection aspects of Requirement R3 remain necessary, they can be addressed through requirements in other standards (such as PRC-016-1 Requirement R3 for Remedial Action Schemes) or through a targeted request for data or information pursuant to Section 1600 of the NERC Rules of Procedure. Therefore, WECC and NERC seek the retirement of Requirement R3

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<sup>9</sup> See Exhibit A.

pursuant to paragraph 81 of FERC's 2012 order approving NERC's Find, Fix, Track and Report program.<sup>10</sup>

For these reasons, and as stated more fully in Exhibit A, the retirement of regional Reliability Standard PRC-004-WECC-2 would have no adverse impact on reliability.

#### **IV. EFFECTIVE DATE OF RETIREMENT**

The retirement of WECC Regional Reliability Standard PRC-004-WECC-2 will be effective as of the date in the proposed implementation plan (Exhibit B). Following the retirement of PRC-004-WECC-2, the two WECC defined terms that are now used only in the PRC-004-WECC-2 standard, Security-Based Misoperation and Dependability-Based Misoperation, would be considered retired as well.

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<sup>10</sup> In this order, FERC stated:

The Commission is interested in obtaining views on whether [redundant or unnecessary] requirements could be removed from the Reliability Standards with little effect on reliability and an increase in efficiency of the ERO compliance program. If NERC believes that specific Reliability Standards or specific requirements within certain Standards should be revised or removed, we invite NERC to make specific proposals to the Commission identifying the Standards or requirements and setting forth in detail the technical basis for its belief. . . .

*N. Am. Elec. Reliability Corp.*, 138 FERC ¶ 61,193, at P 81 (2012).

Respectfully submitted,

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**EXHIBIT A—C**