

June 17, 2015

**VIA ELECTRONIC FILING**

Jim Crone  
Director, Energy Division  
Manitoba Innovation, Energy and Mines  
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RE: *North American Electric Reliability Corporation*

Dear Mr. Crone:

The North American Electric Reliability Corporation (“NERC”) hereby submits Notice of Filing of the North American Electric Reliability Corporation of Proposed Reliability Standards PRC-004-5 and PRC-010-2. NERC requests, to the extent necessary, a waiver of any applicable filing requirements with respect to this filing.

NERC understands that the Province of Manitoba enacted on April 1, 2012, the Reliability Standards Regulation, which was implemented through an Order of Council. It is NERC’s understanding that the Reliability Standards Regulation makes compliance with the NERC reliability standards a legal requirement in Manitoba and adopted the NERC Reliability Standards listed in Schedule 1 of the Regulation for implementation in Manitoba. The Regulation further provides that a reliability standard made by NERC that is listed in Schedule 1 is adopted as a reliability standard for Manitoba.

NERC requests that Manitoba take all necessary action to include Proposed Reliability Standards PRC-004-5 and PRC-010-2 in Schedule 1 of the Reliability Standards Regulation, so that they may be adopted as reliability standards for Manitoba. In addition, as explained in this filing, the implementation and effective dates of proposed Reliability Standards PRC-004-5, PRC-010-1 (previously submitted on February 25, 2015), and PRC-010-2, as well as pending Reliability Standard EOP-011-1 (submitted on January 8, 2015) and the revised definitions of UVLS Program and Remedial Action Scheme (submitted on February 25, 2015), should be aligned because the proposals reflect an integrated and coordinated approach to UVLS Programs. Thus, NERC requests concurrent approval and aligned implementation of the proposed Reliability Standards PRC-004-5, PRC-010-1, PRC-010-2, and EOP-010-1 and the revised definitions of UVLS Program and Remedial Action Scheme

Please contact the undersigned if you have any questions.

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Respectfully submitted,

/s/ Holly A. Hawkins

Holly A. Hawkins  
*Associate General Counsel for the North  
American Electric Reliability Corporation*

Enclosure

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**BEFORE THE  
PROVINCE OF MANITOBA**

**NORTH AMERICAN ELECTRIC )  
RELIABILITY CORPORATION )**

**NOTICE OF FILING OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION  
OF PROPOSED RELIABILITY STANDARDS  
PRC-004-5 AND PRC-010-2**

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June 17, 2015

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**BEFORE THE  
PROVINCE OF MANITOBA**

**NORTH AMERICAN ELECTRIC**                                    )  
**RELIABILITY CORPORATION**                                )

**NOTICE OF FILING OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION  
OF PROPOSED RELIABILITY STANDARDS  
PRC-004-5 AND PRC-010-2**

The North American Electric Reliability Corporation (“NERC”) hereby provides notice of proposed Reliability Standards PRC-004-5 (*Protection System Misoperation Identification and Correction*) (Exhibit A-1) and PRC-010-2 (*Undervoltage Load Shedding*) (Exhibit A-2). The proposed Reliability Standards address Misoperation of undervoltage load shedding (“UVLS”) equipment.<sup>1</sup> These standards were developed as Phase 2 of NERC’s pending proposal to consolidate UVLS Program Reliability Standards, pursuant to the Federal Energy Regulatory Commission’s (“FERC”) directive that NERC develop modifications to PRC-010-0 to require an integrated and coordinated approach in all protection systems.<sup>2</sup> The NERC Board of Trustees adopted proposed Reliability Standards PRC-004-5 and PRC-010-2 on May 7, 2015.

The proposed Reliability Standards PRC-004-5 and PRC-010-2 are just, reasonable, not unduly discriminatory or preferential, and in the public interest. NERC also provides notice of the Implementation Plans for the proposed Reliability Standards (Exhibit B). The proposed

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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”), available at [http://www.nerc.com/files/Glossary\\_of\\_Terms.pdf](http://www.nerc.com/files/Glossary_of_Terms.pdf). “UVLS Program” and “Remedial Action Scheme” are defined herein, as proposed in Docket Nos. RM15-12-000 and RM15-13-000. See *infra* n. 7.

<sup>2</sup> *Mandatory Reliability Standards for the Bulk-Power System*, Order No. 693, 118 FERC ¶ 61,218, P 1509 (2007). See *infra* Section III.C (discussing the history of the proposed Reliability Standards) and Section V (discussing related, pending, proceedings associated with proposed Reliability Standards PRC-004-5, PRC-010-1, PRC-010-2, and EOP-011-1 and the revised definitions of UVLS Program and Remedial Action Scheme).

revisions do not affect the Violation Risk Factors (“VRFs”) or Violation Severity Levels (“VSLs”) associated with the Reliability Standards subject to this filing (attached for reference at Exhibit E).<sup>3</sup> The proposed Reliability Standards will be effective on the later of the first day following the Effective Date of PRC-010-1 or the first day of the first calendar quarter after the proposed Reliability Standards PRC-004-5 and PRC-010-2 are approved. In addition, as discussed in Section V below, the implementation and effective dates of proposed Reliability Standards PRC-004-5, PRC-010-1, and PRC-010-2, as well as pending Reliability Standard EOP-011-1 and the revised definitions of UVLS Program and Remedial Action Scheme, shall be aligned as proposed, because the proposals reflect an integrated and coordinated approach to UVLS Programs.<sup>4</sup>

This filing presents the technical basis and purpose of proposed Reliability Standards PRC-004-5 and PRC-010-2, a summary of development history (Exhibit F), and a demonstration that the proposed Reliability Standards meet the Reliability Standards criteria (Exhibit C).

## **I. EXECUTIVE SUMMARY**

The reliability goals of the proposed Reliability Standards are to ensure that UVLS protective relay Misoperations are identified and corrected, and that UVLS equipment performance is appropriately evaluated. To achieve these goals, and ensure that the planned retirement of currently effective UVLS Reliability Standards does not result in a gap in coverage, the standard drafting team developed the revisions included within proposed Reliability Standards PRC-004-5 and PRC-010-2. As proposed, (i) Reliability Standard PRC-004-5 will revise that standard to be applicable to UVLS that is intended to trip one or more BES Elements,

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<sup>3</sup> NERC is separately reviewing the VRF associated with PRC-004-3 (included in Exhibit E-1), consistent with FERC’s directive on May 13, 2015. *See N. Am. Elec. Reliability Corp.*, 151 FERC ¶ 61,129 (2015).

<sup>4</sup> These listed and pending proposed Reliability Standards and definitional revisions are related. *See infra* Section V and accompanying citations.

and (ii) PRC-010-2 will reflect revisions to Requirement R4 of that Reliability Standard to expressly require evaluation of UVLS Program equipment performance, with a conforming change to Requirement R5.

The proposed Reliability Standards were developed through Phase 2 of Project 2008-02 to implement an integrated and coordinated approach for UVLS Programs, as embodied in pending Reliability Standard PRC-010-1. In Order No. 693, FERC directed “the ERO to develop a modification to PRC-010-0 through the Reliability Standards development process that requires that an integrated and coordinated approach be included in all protection systems on the Bulk-Power System, including ... UVLS programs.”<sup>5</sup> Proposed Reliability Standard PRC-010-1, submitted on February 25, 2015, represented the standard drafting team’s efforts under NERC Project 2008-02 (*i.e.*, Phase 1 of the project) to develop such an integrated and coordinated approach for UVLS Programs. This filing addresses the final item remaining from that earlier phase of the project.

In particular, the proposal for Reliability Standard PRC-010-1 contemplates retirement of currently effective UVLS Program related Reliability Standards, such as Reliability Standard PRC-022-1. Reliability Standard PRC-022-1 includes Requirements that pertain to UVLS Misoperation. Due to coordination with other projects, efforts to address Misoperation of UVLS currently addressed in Reliability Standard PRC-022-1 were segregated to a new phase of UVLS Reliability Standard development entitled Project 2008-02.2, which has led to the development of the proposed Reliability Standards.

Under Project 2008-02.2, the standard drafting team designed a two-pronged approach proposing modifications to Reliability Standards PRC-004-5 and PRC-010-1 to address

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<sup>5</sup> Order No. 693, at P 1509.

identification, correction, and evaluation of performance of UVLS Programs and its equipment.<sup>6</sup> Proposed PRC-004-5 addresses protection systems that trip BES interrupting devices (*i.e.*, BES Elements). Performance under proposed Reliability Standard PRC-004-5 is initiated when a BES interrupting device automatically trips or is manually tripped due to a Protection System failure to operate. Proposed Reliability Standard PRC-010-2, on the other hand, addresses review of UVLS equipment and whether UVLS Program equipment performed effectively following an event that resulted in a voltage excursion for which the UVLS Program was designed to operate. Proposed Reliability Standard PRC-010-2, Requirements R4 and R5 were revised to clarify that the assessment to determine whether the UVLS Program resolved the undervoltage issues associated with the relevant event includes an evaluation of UVLS equipment operation.

## **II. NOTICES AND COMMUNICATIONS**

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

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<sup>6</sup> Note that centrally controlled UVLS is now addressed by the proposed definition of “Remedial Action Scheme” per the proposal submitted on February 25, 2015. As a result, this petition does not address such centrally controlled UVLS.



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### **III. BACKGROUND**

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

The proposed Reliability Standards were developed in an open and fair manner and in accordance with the Reliability Standard development process. NERC develops Reliability Standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC Standard Processes Manual.<sup>7</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 the Reliability Standard is submitted to the applicable governmental authorities.

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<sup>7</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. History of the Proposed Reliability Standards**

As described below, the proposed Reliability Standards were designed by the standard drafting team during the second phase of implementing an integrated and coordinated approach to the design, evaluation, and reliable operation of UVLS Programs.

### **1. Project 2008-02.2 Phase 2 of Undervoltage Load Shedding (UVLS): Misoperations**

NERC Project 2008-02 was established to modify the UVLS-related Reliability Standards to establish an integrated and coordinated approach to the design, evaluation, and reliable operation of UVLS Programs that are used to mitigate undervoltage conditions leading to voltage instability, voltage collapse, or Cascading on the Bulk Electric System. The standard drafting team for Project 2008-02 aimed to consolidate existing UVLS-related Reliability Standards and eliminate the Regional Reliability Organization as an applicable entity in Reliability Standard PRC-020-1. To achieve those goals, the standard drafting team sought to create a results-based standard clearly defining the responsibilities of applicable entities to:

- pursue an integrated and coordinated approach to the design, evaluation, and reliable operation of automatic, distributed UVLS Programs;
- ensure the coordination of automatic, distributed, UVLS Programs with generator voltage ride-through capabilities and protection and control systems; and
- establish proper and meaningful automatic, distributed UVLS database requirements.

In its efforts, the standard drafting team considered input from a variety of sources including the 2003 Blackout Report, FERC guidance in Order No. 693, and recommendations from the NERC System Protection and Control Subcommittee (“SPCS”) of the Planning Committee in the December 2010 *NERC SPCS Technical Review of UVLS-Related Standards: PRC-010-0, PRC-*

020-1, PRC-021-1, and PRC-022-1 (“SPCS Technical Review”).<sup>8</sup> The SPCS Technical Review recommended (among other revisions) differentiating post-event validation of UVLS Program design from verifying correct operation of UVLS equipment.

During the development of PRC-004-3 (Project 2010-05.1 (*System Protection: Misoperations*)) and PRC-010-1 (Project 2008-02 (*Undervoltage Load Shedding (UVLS)*)), both standard drafting teams decided that Misoperation of UVLS equipment stemming from the retirement of PRC-022-1 (*Under-Voltage Load Shedding Program Performance*) would be addressed as a later phase of the project. Reliability Standard PRC-022-1 addressed UVLS operation and Misoperation (Requirement R1) and included a provision for mitigating future Misoperations through a Corrective Action Plan (Requirement R1.5). It was decided that this aspect of PRC-022-1 would be accounted for through Project 2008-02.2 – Phase 2 Undervoltage Load Shedding (UVLS): Misoperations.<sup>9</sup> This phase of the project was initially deferred due to dependencies with other projects being completed.

The reliability goals of Project 2008-02.2 are to ensure that UVLS equipment performance (operation/non-operation) is evaluated and that any Misoperation of UVLS is identified and corrected. Through Project 2008-02.2, the standard drafting team addressed Misoperation of UVLS equipment, through the revisions in proposed Reliability Standards PRC-004-5 and PRC-010-2.

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<sup>8</sup> See, [http://www.nerc.com/comm/PC/System%20Protection%20and%20Control%20Subcommittee%20SPCS%20DL/PR C-010\\_022%20Report\\_Approved\\_20101208.pdf](http://www.nerc.com/comm/PC/System%20Protection%20and%20Control%20Subcommittee%20SPCS%20DL/PR C-010_022%20Report_Approved_20101208.pdf). These standards are discussed in more detail in Section III.C.3.

<sup>9</sup> The Project webpage is available at [http://www.nerc.com/pa/Stand/Pages/Project-2008-02\\_2-Phase-2-Undervoltage-Load-Shedding-UVLS-Misoperations.aspx](http://www.nerc.com/pa/Stand/Pages/Project-2008-02_2-Phase-2-Undervoltage-Load-Shedding-UVLS-Misoperations.aspx).

## 2. **PRC-004-5**

Reliability Standard PRC-004-1 was submitted on April 3, 2006. On June 8, 2011, NERC submitted an interpretation of Requirements R1 and R3 of PRC-004-1 and Requirements R1 and R2 of PRC-005-1. PRC-004-2 was submitted on March 4, 2011. PRC-004-2.1a was submitted on August 27, 2012. PRC-004-3, which was filed to replace PRC-004-2.1a, was submitted on September 23, 2014. PRC-004-4 was more recently filed on February 25, 2015 to address dispersed generation resources. Proposed Reliability Standard PRC-004-5 is intended to replace prior versions of PRC-004.

## 3. **PRC-010-2**

In Order No. 693, FERC directed an integrated and coordinated approach to all protection systems.<sup>10</sup> In accordance with this directive, in February of 2015, NERC submitted on February 25, 2015 Reliability Standard PRC-010-1, a revised definition of UVLS Program, and the associated Implementation Plan and VRF and VSLs. NERC also requested in that filing retirement of UVLS Reliability Standards PRC-010-0 (*Assessment of the Design and Effectiveness of UVLS Program*); PRC-020-1 (*Under-Voltage Load Shedding Program Database*); PRC-021-1 (*Under-Voltage Load Shedding Program Data*); and PRC-022-1 (*Under-Voltage Load Shedding Program Performance*), as PRC-010-1 addresses the same reliability principles outlined in those standards being retired. NERC's filing for PRC-010-1 noted that one aspect associated with Project 2008-02 remained. As described in Section III.C.1 above, the standard drafting teams determined that the aspect of PRC-022-1 relating to Misoperation of UVLS should be addressed at a later stage, which became Project 2008-02.2. This filing

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<sup>10</sup> Order No. 693, at P 1509.

addresses that remaining issue by submitting the proposed Reliability Standards developed under Project 2008-02.2.

#### **IV. JUSTIFICATION**

As discussed in Exhibit C and below, proposed Reliability Standards PRC-004-5 and PRC-010-2, satisfy the Reliability Standards criteria and are just, reasonable, not unduly discriminatory or preferential, and in the public interest. The following subsections provide: (A) a description of each proposed standard, its reliability purposes, and applicable entities; (B) justification for each proposed standard, detailing the proposed revisions; and (C) discussion of the enforceability of the proposed standards. As discussed below, the scope of the revisions are consistent with identifying Misoperation of UVLS equipment and FERC’s directive in Order No. 693 for development of an integrated and coordinated approach in UVLS Programs.

##### **A. Proposed Reliability Standard PRC-004-5**

###### **1. Purpose of Proposed PRC-004-5 and Applicable Entities**

The purpose of proposed Reliability Standard PRC-004-5 is to “[i]dentify and correct the causes of Misoperations of Protection Systems for Bulk Electric System (BES) Elements.” The standard applies to Distribution Providers, Generation Owners, and Transmission Owners. Proposed Reliability Standard PRC-004-5 updates prior versions of PRC-004 (*see supra*, Section III.C.2) by reference to UVLS. Proposed Reliability Standard PRC-004-5 improves existing versions of the Reliability Standard by expressly referencing UVLS equipment. Specifically, “Undervoltage load shedding” was added to the Applicability section 4.2 of PRC-004-5 to include UVLS within the scope of the standard.

###### **2. Justification for Proposed Revisions**

Based on the analysis regarding the scope of PRC-004 and PRC-010, the standard drafting team proposed one revision to the Applicability of PRC-004-5 to expand the scope of

Facilities under the standard, so that the standard would encompass UVLS intended to trip one or more BES Elements. No changes were made to any specific Requirements or Measures under PRC-004, as the proposed revision ensures that all of the Requirements under the standard become applicable to UVLS equipment. The UVLS revisions described herein and reflected at Applicability, Section 4.2.3 of PRC-004-5 are as follows:<sup>11</sup>

**4.2. Facilities:**

**4.2.1** Protection Systems for BES Elements, with the following exclusions:

**4.2.1.1** Non-protective functions that are embedded within a Protection System.

**4.2.1.2** Protective functions intended to operate as a control function during switching.<sup>2</sup>

**4.2.1.3** Special Protection Systems (SPS).

**4.2.1.4** Remedial Action Schemes (RAS).

**4.2.1.5** Protection Systems of individual dispersed power producing resources identified under Inclusion I4 of the BES definition where the Misoperations affected an aggregate nameplate rating of less than or equal to 75 MVA of BES Facilities.

**4.2.2** Underfrequency load shedding (UFLS) that is intended to trip one or more BES Elements.

**4.2.3** Undervoltage load shedding (UVLS) that is intended to trip one or more BES Elements.

This modification will require applicable entities to address UVLS that trips a BES Element similarly to other Protection Systems in PRC-004. PRC-004-5 would initiate a review of UVLS when a BES interrupting device operates per a Protection System or by manual intervention in response to a Protection System failure to operate. Proposed Reliability Standard PRC-004-5 works together with PRC-010-2, because inclusion of UVLS to the Applicability of PRC-004-5 now addresses the operation of UVLS for BES Elements. Where UVLS trips a BES Element, an entity will initiate work under PRC-004. If the entity discovers a Misoperation

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<sup>11</sup> See Exhibit A-1 for full redline.

under PRC-004-5, the entity will develop and implement a Corrective Action Plan for any known causes of the Misoperation. Action under PRC-004-5 may occur within a narrower time frame than under PRC-010-2, because if a BES interrupting device trips, it must be reviewed timely and any cause of Misoperations mitigated. If a planner under PRC-010-2 discovers a potential Misoperation of UVLS equipment, it would be considered a deficiency in the UVLS Program and be addressed accordingly. As discussed in Section IV.B., the revisions to PRC-010-2 address operation/non-operation of UVLS equipment within a UVLS Program. PRC-010-2 also includes equipment that generally trips equipment classified as BES and equipment not classified as BES.

**B. Proposed Reliability Standard PRC-010-2**

1. Purpose of Proposed PRC-010-2 and Applicable Entities

The purpose of PRC-010-2 is “[t]o establish an integrated and coordinated approach to the design, evaluation, and reliable operation of Undervoltage Load Shedding Programs (“UVLS Programs”).” Proposed PRC-010-2 would replace pending Reliability Standard PRC-010-1. PRC-010-1 did not explicitly address Misoperation of UVLS Equipment, previously addressed under Reliability Standard PRC-022-1. *See supra*, Section III.C. Proposed Reliability Standard PRC-010-2 updates pending Reliability Standard PRC-010-1 by explicitly addressing the operations/non-operation (i.e., Misoperation) of UVLS Equipment to avoid a gap in coverage due to retirement of Reliability Standard PRC-022-1. The proposed Reliability Standard achieves this by expressly referencing performance (i.e., operation/non-operation) of the UVLS

Program equipment at Requirement R4 with a conforming update to Requirement R5 to specifically reference the assessment performed in Requirement R4.<sup>12</sup>

The proposed Reliability Standard PRC-010-2 applies to Planning Coordinators and Transmission Planners. The standard applies to the Planning Coordinator and Transmission Planner because either may be responsible for designing and coordinating the UVLS Program. The standard drafting team determined that the Planning Coordinator or Transmission Planner is in the best position to assess correct operation of UVLS equipment within the UVLS Program. The planners will have the inputs from the UVLS entities and the tools necessary to determine whether specific UVLS operated correctly according to the design of the UVLS Program. Proposed PRC-010-2 also applies to Distribution Providers and Transmission Owners responsible for the ownership, operation, or control of UVLS equipment as required by the UVLS Program established by the Transmission Planner or Planning Coordinator. These Distribution Provider and Transmission Owners are referred to as “UVLS entities” within the Applicability section of proposed Reliability Standard PRC-010-2.

## 2. Justification for Proposed Revisions

The revisions to PRC-010-1 address issues not resolved through the reference to UVLS under PRC-004-5, and which were examined by the standard drafting team as part of Project 2008-02.2. Proposed Reliability Standard PRC-010-2, Requirements R4 and R5 explicitly cover

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<sup>12</sup> While “Misoperation” as defined by the *Glossary of Terms Used in NERC Reliability Standards* is not used within the Requirements of PRC-10, the term is used in the *PRC-010-2 – Application Guidelines* to provide clarity that UVLS Program equipment deficiencies include Misoperations that are to be addressed by UVLS entities. See Exhibit A-2, at *PRC-010-2 – Application Guidelines*, Guidelines for Requirement R4.



UVLS Program equipment performance and action to address any deficiencies identified in assessment of such performance as follows:<sup>13</sup>

**R4.** Each Planning Coordinator or Transmission Planner shall, within 12 calendar months of an event that resulted in a voltage excursion for which its UVLS Program was designed to operate, perform an assessment to evaluate ~~whether its UVLS Program resolved the undervoltage issues associated with the event.~~ whether its UVLS Program resolved the undervoltage issues associated with the event. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

**4.1.** Whether its UVLS Program resolved the undervoltage issues associated with the event, and

**4.2.** The performance (i.e., operation and non-operation) of the UVLS Program equipment.

**M4.** Acceptable evidence may include, but is not limited to, date-stamped event data, event analysis reports, or other documentation detailing the assessment of the UVLS Program and associated equipment.

**R5.** Each Planning Coordinator or Transmission Planner that identifies deficiencies ~~in its UVLS Program~~ during an assessment performed in either Requirement R3 or R4 shall develop a Corrective Action Plan to address the deficiencies and subsequently provide the Corrective Action Plan, including an implementation schedule, to UVLS entities within three calendar months of completing the assessment. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

**M5.** Acceptable evidence must include a date-stamped Corrective Action Plan that addresses identified deficiencies and may also include date-stamped reports or other documentation supporting the Corrective Action Plan. Evidence should also include date-stamped communications showing that the Corrective Action Plan and an associated implementation schedule were provided to UVLS entities.

These revisions require UVLS entities to address any deficiencies (e.g. Misoperations) identified by a Planning Coordinator or Transmission Planner through the assessment performed under revised Requirement R4. Deficiencies include performance (operation/non-operation) issues associated with UVLS Program equipment. Any identified Misoperations are addressed by the UVLS entities through a Corrective Action Plan developed per Requirement R5 by the Planning Coordinator or Transmission Planner, and executed by the UVLS entities pursuant to

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<sup>13</sup> See Exhibit A-2 for full redline, and additional Frequently Asked Questions included within the *PRC-010-1 – Supplemental Material*.

Requirement R2. The revisions ensure that review of UVLS Program equipment is initiated for an event that resulted in a voltage excursion for which the UVLS Program was designed to operate, and requires the Planning Coordinator and Transmission Planner to assess UVLS equipment for Misoperation under PRC-010. In addition, the assessment addresses the larger issue of whether a UVLS Program was effective following an event that resulted in a voltage excursion for which the UVLS Program was designed to operate. The Planning Coordinator or Transmission Planner will perform an assessment to evaluate whether the UVLS Program resolved the undervoltage issues associated with the event.

This process ensures that UVLS Program equipment is evaluated for Misoperation. The standard drafting team created two parts of Requirement R4 to clarify that UVLS equipment operations must be evaluated as a part of the assessment to determine whether the UVLS Program resolved the undervoltage issues associated with the event.<sup>14</sup> This is consistent with identifying Misoperation of UVLS equipment, the directive in Order No. 693, and the SPCS Technical Review.

### **C. Enforceability of The Proposed Reliability Standards**

The proposed Reliability Standards include Measures that support each Requirement to help ensure that the Requirements will be enforced in a clear, consistent, non-preferential manner and without prejudice to any party. The proposed Reliability Standards also include VRFs and VSLs for each Requirement. The VSLs and VRFs are part of several elements used to determine an appropriate sanction when the associated Requirement is violated. The VSLs provide

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<sup>14</sup> See also, Exhibit A-1 and A-2, at *Standard Development Timeline*. In addition to the substantive revisions discussed above, the introductory sections of PRC-004-5 and PRC-010-2 were updated and the prior Background sections in each Reliability Standard was deleted.

guidance on the way that NERC will enforce the Requirements of the proposed Reliability Standards. The VRFs assess the impact to reliability of violating a specific Requirement.

As the Requirements contained in the proposed Reliability Standards track with those contained in the already approved or pending proposed versions of the Reliability Standards, the standard drafting team determined that the modifications proposed here did not give rise to changes in VSLs and VRFs for the proposed Reliability Standards. For example, the standard drafting team agreed that, originally, the assessment in PRC-010 at Requirement R4 was intended to include UVLS equipment, however, Requirement R4, Part 4.2 was added as discussed above to clarify performance of UVLS equipment explicitly to address any perception that Misoperation of UVLS equipment was not addressed. Thus, partial performance of Requirement R4 of proposed Reliability Standard PRC-010-2 is not permitted, and no modification to VRF or VSLs appropriate.

For reference purposes, Exhibit E includes the detailed analysis of the assignment of VRFs and the VSLs for the proposed Reliability Standards as previously submitted (for Reliability Standard PRC-010-1, as reflected in Exhibit E-2) and RD14-14-000 (for Reliability Standard PRC-004-3 as reflected in Exhibit E-1). The VRFs and VSLs for the proposed Reliability Standards comport with NERC and FERC guidelines, although NERC notes that it is reviewing VRF designations for PRC-004 consistent with FERC's directive on May 13, 2015 for PRC-004-3.<sup>15</sup>

## **V. EFFECTIVE DATE**

Proposed Reliability Standards PRC-004-5 and PRC-010-2 will be effective on the later of the first day following the Effective Date of PRC-010-1 or the first day of the first calendar

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<sup>15</sup> *N. Am. Elec. Reliability Corp.*, 151 FERC ¶ 61,129 (2015).

quarter after the proposed Reliability Standards are approved. In addition, the implementation and effective dates of proposed Reliability Standards PRC-004-5, PRC-010-1, and PRC-010-2, as well as pending Reliability Standard EOP-011-1 and the revised definitions of UVLS Program and Remedial Action Scheme, shall be aligned as proposed, because the proposals reflect an integrated and coordinated approach to UVLS Programs.

Concurrent approval and aligned implementation of the proposed Reliability Standards PRC-004-5, PRC-010-1, PRC-010-2, and EOP-010-1 and the revised definitions of UVLS Program and Remedial Action Scheme are just and reasonable and necessary due to the following relationships between the proposals:<sup>16</sup>

- Proposed Reliability Standards PRC-004-5 and PRC-010-2, as filed in this proceeding, relate to proposed Reliability Standard PRC-010-1 by serving as the second phase of Project 2008-02 and filling a gap in coverage for UVLS Programs arising due to the retirement of PRC-022-1 under implementation of PRC-010-1.<sup>17</sup>
- Proposed Reliability Standards PRC-010-1 and the pending proposed definition of UVLS Program necessitate approval of the proposed pending definition of Remedial Action Scheme, because the term Remedial Action Scheme encompasses centrally controlled UVLS, while the term “UVLS Program” excludes it, due to the determination that centrally controlled UVLS schemes are commensurate with Remedial Actions Schemes.<sup>18</sup>
- Proposed Reliability Standards PRC-010-1 necessitates approval of proposed pending Reliability Standard EOP-011-1, because (i) EOP-011-1 will retire Reliability Standard EOP-003-2, and (ii) Requirements R2, R4, and R7 of EOP-003-2 map to PRC-010-1 to eliminate identified redundancy between the standards.<sup>19</sup>

As a result, concurrent approval of proposed Reliability Standards EOP-011-1, PRC-010-1, PRC-010-2, and PRC-004-5, together with the pending definitions of UVLS Program and

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<sup>16</sup> The Implementation Plans reflected in Exhibit B also reflect such a coordinated approach.

<sup>17</sup> *See supra*, Section III.C.

<sup>18</sup> *See filings submitted on February 25, 2015.*

<sup>19</sup> *Id.*; and filing submitted on January 8, 2015).

Remedial Action Scheme, is just, reasonable, and necessary to ensure implementation of an integrated and coordinated approach to UVLS Programs without a gap in reliability.

Respectfully submitted,

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Date: June 17, 2015

**EXHIBITS A – G**

(Available on the NERC Website at

[http://www.nerc.com/FilingsOrders/ca/Canadian%20Filings%20and%20Orders%20DL/AttachPhase\\_II\\_UVLS.pdf](http://www.nerc.com/FilingsOrders/ca/Canadian%20Filings%20and%20Orders%20DL/AttachPhase_II_UVLS.pdf))