

March 30, 2015

**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 Supplemental Notice of Filing of the North American Electric Reliability Corporation of Proposed Reliability Standards PRC-001-1.1(ii), PRC-019-2, and PRC-024-2. NERC requests, to the extent necessary, a waiver of any applicable filing requirements with respect to this filing.

NERC understands the AESO may adopt the proposed reliability standards 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

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approved in Alberta (called an “Alberta reliability standard”) generally varies from the similar and related NERC Reliability Standard.

NERC requests the AESO consider the Proposed Reliability Standards PRC-001-1.1(ii), PRC-019-2, and PRC-024-2 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/ Holly A. Hawkins

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

Enclosure

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**BEFORE THE  
ALBERTA ELECTRIC SYSTEM OPERATOR**

**NORTH AMERICAN ELECTRIC )  
RELIABILITY CORPORATION )**

**SUPPLEMENTAL NOTICE OF FILING OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION OF PROPOSED  
RELIABILITY STANDARDS  
PRC-001-1.1(ii), PRC-019-2, AND PRC-024-2**

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March 30, 2015

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- Exhibit A** Proposed Reliability Standards
- Exhibit B** Implementation Plans
- Exhibit C** Reliability Standards Criteria
- Exhibit D** Summary of Development History and Complete Record of Development of Proposed Reliability Standards

**BEFORE THE  
ALBERTA ELECTRIC SYSTEM OPERATOR**

**NORTH AMERICAN ELECTRIC )  
RELIABILITY CORPORATION )**

**SUPPLEMENTAL NOTICE OF FILING OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION OF PROPOSED  
RELIABILITY STANDARDS  
PRC-001-1.1(ii), PRC-019-2, AND PRC-024-2**

The North American Electric Reliability Corporation (“NERC”) hereby submits the following proposed Reliability Standards (Exhibit A), which have been modified to adjust the applicability of the proposed Reliability Standards to dispersed generation resources:<sup>1</sup>

- PRC-001-1.1(ii) (System Protection Coordination);<sup>2</sup>
- PRC-019-2 (Coordination of Generating Unit or Plant Capabilities, Voltage Regulating Controls, and Protection); and
- PRC-024-2 (Generator Frequency and Voltage Protective Relay Settings).

The proposed Reliability Standards are just, reasonable, not unduly discriminatory or preferential, and in the public interest.<sup>3</sup>

On February 25, 2015, NERC submitted a filing (“February 25 filing”) of five proposed Reliability Standards, which were modified to adjust their applicability to dispersed generation resources. Similarly, in this Supplemental filing, NERC proposes changes to PRC-001, PRC-019, and PRC-024 to clarify their applicability to dispersed generation resources.

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<sup>1</sup> Dispersed generation resources as used in this filing refers to variable generation that depends on a primary fuel source which varies over time and cannot be stored. *See* Ex. C to the related February 25 filing.

<sup>2</sup> An explanation of the NERC numbering convention for Reliability Standards is available on the NERC web site at: [http://www.nerc.com/pa/Stand/Resources/Documents/NERC\\_standards\\_numbering\\_system\\_V2.pdf](http://www.nerc.com/pa/Stand/Resources/Documents/NERC_standards_numbering_system_V2.pdf).

<sup>3</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).

NERC requests that the proposed standards in this Supplemental filing be considered as part of the February 25 filing. NERC also provides notice of the Implementation Plan for each proposed Reliability Standard (Exhibit B).

The proposed changes do not affect the Violation Risk Factors (“VRFs”), Violation Severity Levels (“VSLs”), or the Measures associated with the proposed Reliability Standards subject to this Supplemental filing.

This Supplemental filing presents the technical basis and purpose of the proposed Reliability Standards, a summary of the development history (Exhibit D), and a demonstration that the proposed Reliability Standards meet the Reliability Standards criteria (Exhibit C). This Supplemental filing incorporates by reference Exhibit C (Draft Technical White Paper), Exhibit E (Summary of Development History and Complete Record of Development of Proposed Reliability Standards ), and Exhibit F (Standard Drafting Team Roster for NERC Standards Development Project 2014-01) of the February 25 filing. Section C (Definition of Bulk Electric System) and Section F (Design and Operational Characteristics of Dispersed Power Producing Resources) of the February 25 filing are also incorporated by reference.

## **I. EXECUTIVE SUMMARY**

The proposed revisions clarify how the unique operating characteristics of dispersed power producing resources impact the applicability of NERC Reliability Standards. As NERC has previously asserted, in order to ensure that Reliability Standards are applied in a cost-effective manner and that the applicability of Reliability Standards is focused on entities having a material impact on reliability of the Bulk-Power System, it is necessary to provide greater specificity in the applicability section of the Reliability Standards.<sup>4</sup> The Federal Energy

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<sup>4</sup> See *Mandatory Reliability Standards for the Bulk-Power System*, Notice of Proposed Rulemaking, 117 FERC ¶ 61,084 (2006) at P 49.

Regulatory Commission (“FERC”) acknowledged the need for such clarity and prioritization in Order No. 693,<sup>5</sup> and has, in the past, approved Reliability Standards with applicability based on electric facility characteristics.<sup>6</sup>

Dispersed power producing resources, such as wind and solar, are generally considered to be variable energy resources. As explained below and in the February 25 filing, the design and operating characteristics of these resources are different than traditional generation and Reliability Standards should account for these differences.

The proposed Reliability Standards reflect in-depth technical analysis by the NERC Dispersed Generation Resources Standard Drafting Team, which considered the technical characteristics of dispersed generation and the risk to the Bulk-Power System associated with this type of generation facilities. The standard drafting team reviewed several groups of Reliability Standards applicable to dispersed generation prior to recommending the proposed changes to the three Reliability Standards listed above.

The standard drafting team determined that when evaluated individually, the components of dispersed power generation, such as individual wind or solar units, often do not pose a significant risk to the reliability of the Bulk-Power System. However, reliability could be improved by ensuring the equipment utilized to aggregate these individual units to a common point of interconnection with the Bulk-Power System is operated and maintained as required by the NERC Reliability Standards. As a result, NERC is proposing the changes to the three Reliability Standards included in this Supplemental filing in addition to those submitted in the February 25 filing.

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<sup>5</sup> *Mandatory Reliability Standards for the Bulk-Power System*, Order No. 693, FERC Stats. & Regs. ¶ 31,242 at P 98, *order on reh’g*, Order No. 693-A, 120 FERC ¶ 61,053 (2007).

<sup>6</sup> *See also*, EOP-010-1, FAC-003-3, PRC-005-2, and PRC-022-1.

## 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. **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 satisfies 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 a vote of stakeholders and the

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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).



NERC Board of Trustees is required to approve a Reliability Standard before the Reliability Standard is submitted to the applicable governmental authorities.

**B. History of Project 2014-01**

Project 2014-01, Standards Applicability for Dispersed Generation Resources, was initiated in response to industry request and designed to ensure that the Generator Owners and Generator Operators of dispersed generation resources are appropriately assigned responsibility for performance in NERC Reliability Standard requirements that impact the reliability of the Bulk-Power System, given the unique operating characteristics of these resources.

The goal of Project 2014-01 was to review and revise the applicability of all of the Generator Owner- and Generator Operator-related Reliability Standards and ensure that only those dispersed generation resources that could affect the reliability of the Bulk-Power System are subject to applicable Reliability Standards. The standard drafting team identified PRC-005, FAC-008, PRC-023, PRC-025, PRC-004, and VAR-002 for further in-depth review. In addition, the standard drafting team considered the group of IRO, MOD, PRC and TOP Reliability Standards, which require outage and protection, control coordination, planning and data reporting, among other reliability concerns.<sup>8</sup>

The standard drafting team established prioritization criteria for the review and modification of applicability changes recommended to the NERC Reliability Standards listed above. The team evaluated each requirement to identify the appropriate applicability that best supports the reliable operation of the Bulk-Power System. After the standard drafting team identified a standard or requirement where changes to the applicability were warranted, it performed a prioritization. Any standard or requirement which required modifications were

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<sup>8</sup> For a list of all Reliability Standards considered, *see* App. A to Ex. C to the February 25 filing.

assigned a high, medium, or low priority.<sup>9</sup> Following a technical review, the standard drafting team identified five high-priority standards and drafted revisions to these standards. The proposed revisions were included in the February 25 filing.

The standard drafting team also identified medium-priority Reliability Standards, which included PRC-001-1.1, PRC-019 and PRC-024. The standards drafting team prepared revisions to these three Reliability Standards. The standards drafting team did not make any technical content changes beyond the changes necessary to revise the applicability of the three medium-priority Reliability Standards. The proposed changes are designed to ensure consistent application of the NERC Reliability Standards to dispersed power producing resources.

In addition, the standards drafting team identified four regional Reliability Standards as low priority. A list of the Reliability Standards considered and their prioritization order is included in Appendix B to Exhibit C to the February 25 filing. Further proposed Reliability Standards from this Project will be the subject of a future separate filing if the NERC Board adopts additional proposed Reliability Standards.

A detailed description of the standard drafting team considerations for each reviewed Reliability Standard is included in the Draft Technical White Paper (“Technical White Paper”) (Exhibit C to the February 25 filing).

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<sup>9</sup> The standards and requirements priorities were established as follows: 1) high priority was assigned if compliance-related efforts with no appreciable reliability benefit would require not only significant resources but also would require efforts to be initiated by an entity well in advance of the implementation date; 2) medium priority was assigned if significant effort and resources with no appreciable reliability benefit would be required by an entity to be compliant; and 3) low priority was assigned to other changes that may need to be made to further ensure requirements add to reliability, but are not perceived as a significant compliance burden. Reliability Standards PRC-004-2.1a, PRC-005-1.1b, PRC-005-2, VAR-002-2b and VAR-002-2b were identified as “high priority.” See App. B to Ex. C to the February 25 filing.

## **C. History of the Proposed Reliability Standards**

### **1. PRC-001-1.1(ii)**

Reliability Standard PRC-001-1 was submitted on December 5, 2006<sup>10</sup>. On February 25, 2015, PRC-001-1.1(i) was submitted, which will replace PRC-001-1.1.

### **2. PRC-019-2 and PRC-024-2**

Reliability Standards PRC-019-1 and PRC-024-1 were submitted on June 10, 2013 as new Reliability Standards.

## **IV. JUSTIFICATION**

As discussed in Exhibit C and below, the standard drafting team determined the proposed changes to the Reliability Standards satisfy the Reliability Standards criteria, and are just, reasonable, not unduly discriminatory or preferential, and in the public interest. Provided below is the following: 1) a description of each proposed Reliability Standard and its reliability purpose; and 2) justification for each of the proposed Reliability Standards on a requirement-by-requirement basis.

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<sup>10</sup> An errata change was approved by the Standards Committee on April 11, 2012 to capitalize “Protection System” in accordance with the implementation plan for Project 2007-17, which developed a revised definition of “Protection System.”

**A. Proposed Reliability Standards**

1. Purpose of PRC-001-1.1(ii)

Reliability Standard PRC-001-1.1 is designed to ensure that system protection is coordinated among operating entities. Reliability Standard PRC-001-1.1(i), which was submitted on February 25, 2015, modified PRC-001-1 to incorporate the proposed definition of “Remedial Action Scheme” and eliminate the use of the term “Special Protection System.” The proposed PRC-001-1.1(ii) reflects changes made to the currently-effective PRC-001-1.1.

2. Purpose of PRC-019-2

Reliability Standard PRC-019-1 is designed to verify coordination of generating unit Facility or synchronous condenser voltage regulating controls, limit functions, equipment capabilities and Protection System settings. The revisions included in the proposed PRC-019-2 are necessary to align the applicability section of this Reliability Standard with the treatment of dispersed power producing resources within the revised definition of the Bulk Electric System.

3. Purpose of PRC-024-2

Reliability Standard PRC-024-1 is designed to ensure Generator Owners set their generator protective relays such that generating units remain connected during defined frequency and voltage excursions. The revisions included in the proposed PRC-024-2 are necessary to align the applicability section of this Reliability Standard with the treatment of dispersed power producing resources within the revised definition of the Bulk Electric System.

4. Justification for Proposed Revisions

*a) PRC-001-1.1(ii)*

Based on the findings of the Technical White Paper, the standard drafting team made one revision of PRC-001-1.1. Requirement R3, Part 3.1 was modified to clarify that it is not

applicable to individual generating units of dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition.<sup>11</sup> The applicable language of the proposed PRC-001-1.1(ii) reads as follows:

**R3.** A Generator Operator or Transmission Operator shall coordinate new protective systems and changes as follows.

**R3.1.** Each Generator Operator shall coordinate all new protective systems and all protective system changes with its Transmission Operator and Host Balancing Authority.

- Requirement R3.1 is not applicable to the individual generating units of dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition.

As explained in the Technical White Paper,<sup>12</sup> Requirement R3 requires Generator Operators to coordinate new protective systems and changes to existing protective systems with their Transmission Operators. Under the existing industry practice, Generator Operators share and coordinate the protective relay settings at the point of interconnection (e.g. generator leads, radial generator tie-line, etc.) and potentially the main step-up transformer, but not the protective setting on operating (collection) buses, collection feeder, or individual generator protection schemes, as these protection systems do not directly coordinate with an interconnected utility's own protection systems. Relay protection functions such as underfrequency and overfrequency and undervoltage and overvoltage changes are independent of the interconnected utility's protective relay settings.<sup>13</sup>

In response to the findings of the Technical White Paper, the standard drafting team determined that coordination of new or changes to protective systems associated with dispersed

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<sup>11</sup> For a full discussion of Inclusion I4 of the revised Bulk Electric System and its effect on dispersed power resources, see Section C of the February 25 filing.

<sup>12</sup> *Technical White Paper* at 16-17.

<sup>13</sup> *Id.*

power producing resources identified through Inclusion I4 of the Bulk Electric System definition are typically performed on the interconnecting facilities. New protective systems or changes to protective systems associated with these facilities should be coordinated with the Transmission Operators to ensure close coordination with the transmission protective systems. This type of coordination guarantees the overall protection systems operates as designed.

In some situations, the protective systems implemented on the individual generating units of dispersed power producing resources (i.e. individual wind turbines or solar panels/inverters) may need to be coordinated with other protective systems within the same dispersed power producing facility. However, the standards drafting team concluded that new protective systems or changes to these protective systems do not need to be coordinated with the transmission protective systems, as this coordination would not enhance the reliability of the Bulk-Power System.

Based on these findings, Requirement R3 was modified to reflect that coordination by a Generator Operator with its Transmission Operator of new or changes to existing protection systems on individual generating units of dispersed power producing resources is not required. The proposed revision is consistent with the revised Bulk Electric System definition.

*b) PRC-019-2*

Based on the findings of the Technical White Paper, the standard drafting team made one revision of Requirement R4, Part 4.2 of PRC-019-1. Subrequirement 4.2.3.1 was added to Requirement 4.2 to clarify that the Facilities listed in Requirement 4.2 include the aggregate dispersed generating facilities and not the individual units. The proposed revision is intended to provide for consistent application of the Requirement to generator Facilities included in the Bulk

Electric System definition through Inclusion I4. The language of the proposed Part 4.2.3.1 reads as follows:

**4.2.3** Generating plant/ Facility consisting of one or more units that are connected to the Bulk Electric System at a common bus with total generation greater than 75 MVA (gross aggregate nameplate rating).

**4.2.3.1** This includes individual generating units of the dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition where voltage regulating control for the facility is performed solely at the individual generating unit of the dispersed power producing resources.

As explained in the Technical White Paper,<sup>14</sup> dispersed power producing resources typically utilize a site level voltage control scheme that directs the individual generating units to adjust their output to meet the voltage requirements at an aggregate Facility level. In these cases the individual generating units no longer respond once they reach their maximum capability in providing voltage or reactive changes. However, the individual generating units also need to be properly coordinated with protection trip settings on the aggregating equipment to mitigate risk of tripping under this scenario. Therefore, facilities that solely regulate voltage at the individual unit need to consider the Protection Systems at these individual units and their compatibility with the reactive and voltage limitations of the units.

Based on these findings, the standard drafting team determined that for those dispersed power producing facilities that only perform voltage regulating control at the individual generating unit level, coordination should take place at the individual generating unit level of the dispersed power producing resource. These facilities need to consider the Protection Systems at the individual units and their compatibility with the reactive and voltage limitations of the units. Where voltage regulating control is done at an aggregate level, applicability is already included

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<sup>14</sup> *Id.* at 21.

under PRC-019 Requirement R4, Part 4.2.3. This revision is consistent with the revised Bulk Electric System definition.

c) PRC-024-2

Based on the findings of the Technical White Paper, the standard drafting team made two revisions to PRC-024-2. The standard drafting team determined that protective relay settings applied on both the individual generating units and on the aggregating equipment should be included in the language of the Reliability Standard. To reflect this change, the standards drafting team included footnote 4 to PRC-024-2 Requirement R1, and footnote 6 to Requirement R2. The applicable language of the proposed PRC-024-2 reads as follows:<sup>15</sup>

**R1.** Each Generator Owner that has generator frequency protective relaying<sup>3</sup> activated to trip its applicable generating unit(s) shall set its protective relaying such that the generator frequency protective relaying does not trip the applicable generating unit(s) within the “no trip zone” of PRC-024 Attachment 1, subject to the following exceptions:<sup>4</sup> [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning*]

**Footnote 4:** For frequency protective relays associated with dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition, this requirement applies to frequency protective relays applied on the individual generating unit of the dispersed power producing resources, as well as frequency protective relays applied on equipment from the individual generating unit of the dispersed power producing resource up to the point of interconnection.

**R2.** Each Generator Owner that has generator voltage protective relaying activated to trip its applicable generating unit(s) shall set its protective relaying such that the generator voltage protective relaying does not trip the applicable generating unit(s) as a result of a voltage excursion (at the point of interconnection) caused by an event on the transmission system external to the generating plant that remains within the “no trip zone” of PRC-024

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<sup>15</sup> Footnotes 3 and 5 remain unchanged and are omitted. For the full language of the proposed Reliability Standard, please see Exhibit A.



Attachment 2.<sup>6</sup> If the Transmission Planner allows less stringent voltage relay settings than those required to meet PRC-024 Attachment 2, then the Generator Owner shall set its protective relaying within the voltage recovery characteristics of a location-specific Transmission Planner's study. Requirement R2 is subject to the following exceptions: *[Violation Risk Factor: Medium]*  
*[Time Horizon: Long-term Planning]*

**Footnote 6:** For voltage protective relays associated with dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition, this requirement applies to voltage protective relays applied on the individual generating unit of the dispersed power producing resources, as well as voltage protective relays applied on equipment from the individual generating unit of the dispersed power producing resource up to the point of interconnection.

As explained in the Technical White Paper,<sup>16</sup> if the individual generating units at a dispersed power producing resource were excluded from this Reliability Standard, it is possible that large portions or perhaps the entire output of a dispersed power producing resource site could be lost during certain system disturbances. To address this reliability concern, the standard drafting team determined that Protection System settings should be applied on both the individual generating units and on the aggregate equipment, including on any Protection Systems applied on non-Bulk Electric System portions of the aggregating equipment.

The Technical White Paper further explains that for the purpose of compliance evidence, an entity should provide evidence for a single sample generating unit within a dispersed generation site. Registered entities would not be required to provide documentation for each individual unit if a single methodology was applied to set the Protection Systems for all units comprising the facility. The evidence related to a single sample generating unit would be in addition to the evidence required for any Protection System settings for the aggregating equipment.

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<sup>16</sup> *Technical White Paper* at 22.

Based on these technical findings, the standard drafting team made changes to the standard requirements to ensure these requirements are applied to the individual power producing resource up to the point of interconnection with the Bulk-Power System. The proposed changes to PRC-024-2 are consistent with the revised Bulk Electric System definition.

## **V. ENFORCEABILITY OF PROPOSED RELIABILITY STANDARDS**

The proposed Reliability Standards include VRFs and VSLs. Because the Requirements contained in proposed Reliability Standards track with those contained in the already approved or proposed versions of the Reliability Standards, the standard drafting team determined that no revisions were necessary to the VSLs and VRFs for the proposed Reliability Standards.

The VSLs provide guidance on the way that NERC will enforce the Requirements of the proposed Reliability Standards. The VRFs are one of several elements used to determine an appropriate sanction when the associated Requirement is violated. The VRFs assess the impact to reliability of violating a specific Requirement. The VRFs and VSLs for the proposed Reliability Standards comport with NERC and FERC guidelines related to their assignment. For a detailed review of the VRFs, the VSLs, and analysis of how the VRFs and VSLs were determined using these guidelines, please see Exhibit D.

The proposed Reliability Standards also include Measures that support each Requirement by clearly identifying what is required and how the Requirement will be enforced. These Measures help ensure that the Requirements will be enforced in a clear, consistent, and non-preferential manner and without prejudice to any party. The Measures for the proposed Reliability Standards also remain unchanged from previous versions.

Respectfully submitted,

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*Counsel for the North American Electric  
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March 30, 2015

**EXHIBITS A—B and D – L**

(Available on the NERC Website at

<http://www.nerc.com/FilingsOrders/ca/Canadian%20Filings%20and%20Orders%20DL/DGR%20Supplemental%20exhibits.pdf>)

## Exhibit C

### Reliability Standards Criteria

The discussion below explains how the proposed Reliability Standards have met or exceeded the Reliability Standards criteria.

- 1. Proposed Reliability Standards must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve that goal.**

The proposed Reliability Standards continue to achieve specific reliability goals and have included targeted language to clarify the applicability with respect to dispersed power producing resources. Proposed Reliability Standard PRC-001-1.1(ii) is designed to ensure that system protection is coordinated among operating entities. The purpose of proposed Reliability Standard PRC-019-2 is to verify coordination of generating unit Facility or synchronous condenser voltage regulating controls, limit functions, equipment capabilities and Protection System settings.

The purpose of Reliability Standard PRC-024-2 is to ensure Generator Owners set their generator protective relays such that generating units remain connected during defined frequency and voltage excursions.

- 2. Proposed Reliability Standards must be applicable only to users, owners and operators of the bulk power system, and must be clear and unambiguous as to what is required and who is required to comply.**

Proposed Reliability Standard PRC-001-1.1(ii) applies to Balancing Authorities, Transmission Operators, and Generator Operators. Proposed Reliability Standard PRC-019-2

applies to Generator Owners and Transmission Owners that own synchronous condenser(s). Proposed Reliability Standard PRC-024-2 applies to Generator Owners. All of the proposed Reliability Standards have improved the clarity of the coverage with respect to dispersed generation resources and are, therefore, more clear than the prior versions. Other substantive Requirements in the Reliability Standards remain unchanged.

**3. A proposed Reliability Standard must include clear and understandable consequences and a range of penalties (monetary and/or non-monetary) for a violation.**

The VRFs and VSLs for each of the proposed standards comport with NERC and FERC guidelines related to their assignment. The assignment of the severity level for each VSL is consistent with the corresponding Requirement and the VSLs should ensure uniformity and consistency in the determination of penalties. The VSLs do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

Because the Requirements contained in proposed Reliability Standards track with those contained in the already approved or proposed versions of the Reliability Standards, the standards drafting team determined that no revisions were necessary to the VSLs and VRFs for the proposed Reliability Standards. For these reasons, the proposed Reliability Standards include clear and understandable consequences.

4. **A proposed Reliability Standard must identify clear and objective criterion or measure for compliance, so that it can be enforced in a consistent and non preferential manner.**

The proposed Reliability Standards contain Measures that support each requirement by clearly identifying what is required and how the requirement will be enforced. The Measures for the proposed Reliability Standards remain unchanged from previous versions. These Measures help provide clarity regarding how the requirements will be enforced, and ensure that the requirements will be enforced in a clear, consistent, and non-preferential manner and without prejudice to any party.

5. **Proposed Reliability Standards should achieve a reliability goal effectively and efficiently — but do not necessarily have to reflect “best practices” without regard to implementation cost or historical regional infrastructure design.**

The proposed Reliability Standards achieve the reliability goals effectively and efficiently. The proposed Reliability Standards improve reliability by ensuring the equipment utilized to aggregate individual dispersed generation units to a common point of interconnection with the Bulk-Power System is operated and maintained as required by the NERC Reliability Standards.

6. **Proposed Reliability Standards cannot be “lowest common denominator,” i.e., cannot reflect a compromise that does not adequately protect Bulk-Power System reliability. Proposed Reliability Standards can consider costs to implement for smaller entities, but not at consequences of less than excellence in operating system reliability.**

The proposed Reliability Standards do not reflect a “lowest common denominator” approach. The changes reflected in the Proposed Reliability Standards are supported by

technical analysis in the Technical White Paper in Exhibit C to the February 25 filing and are targeted to a specific issue and balance the applicability of the coverage of the proposed Reliability Standards with the reliability needs specific to dispersed generation resources.

7. **Proposed Reliability Standards must be designed to apply throughout North America to the maximum extent achievable with a single Reliability Standard while not favoring one geographic area or regional model. Proposed Reliability Standards should take into account regional variations in the organization and corporate structures of transmission owners and operators, variations in generation fuel type and ownership patterns, and regional variations in market design if these affect the proposed Reliability Standards.**

The proposed Reliability Standards apply throughout North America and do not favor one geographic area or regional model.

8. **Proposed Reliability Standards should cause no undue negative effect on competition or restriction of the grid beyond any restriction necessary for reliability.**

The proposed Reliability Standards do not restrict the available transmission capability or limit use of the Bulk-Power System in a preferential manner.

9. **The implementation time for the proposed Reliability Standard is reasonable.**

The proposed effective dates for the proposed Reliability Standards are just and reasonable and appropriately balance the urgency in the need to implement the standards against the reasonableness of the time allowed for those who must comply to develop necessary procedures or other relevant capability. The proposed effective dates are explained in the proposed Implementation Plans, attached as Exhibit B. The Implementation Plans reflect timing needed to align changes related to dispersed power producing resources with the version being



modified. The timing is also set to become effective on an expedited basis to parallel the implementation of the revised definition of Bulk Electric System. The Implementation Plans also account for ongoing implementation of prior versions as necessary.

**10. The Reliability Standard was developed in an open and fair manner and in accordance with the Reliability Standard development process.**

The proposed Reliability Standards were developed in accordance with NERC's ANSI-accredited processes for developing and approving Reliability Standards. Exhibit D includes a summary of the Reliability Standards development proceedings, and details the processes followed to develop the standards.

These processes included, among other things, multiple comment periods, pre-ballot review periods, and balloting periods. Additionally, all meetings of the drafting team were properly noticed and open to the public.

**11. NERC must explain any balancing of vital public interests in the development of proposed Reliability Standards.**

NERC has identified no competing public interests regarding the request for approval of these proposed Reliability Standards. No comments were received that indicated the proposed Standards conflict with other vital public interests.

**12. Proposed Reliability Standards must consider any other appropriate factors.**

No other negative factors relevant to whether the proposed Reliability Standards are just and reasonable were identified.