



June 8, 2011

VIA ELECTRONIC FILING

Ms. Erica Hamilton, 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 Ms. Hamilton:

The North American Electric Reliability Corporation (“NERC”) hereby submits this Notice of Filing of the following proposed Personnel Performance, Training and Qualifications (PER) Reliability Standard set forth as **Exhibit A** to this petition that was approved by the NERC Board of Trustees on February 17, 2011:

- PER-003-1 — Operating Personnel Credentials

Additionally, NERC provides notice of the associated Implementation Plan for PER-003-1 that calls for the retirement of Reliability Standard PER-003-0 and effective date of PER-003-1 that is the first day of the first calendar quarter twelve months after approval of PER-003-1.

This filing discusses the proposed PER-003-1 Reliability Standard and how the proposed standard and associated Implementation Plan meet the goals of reliability for approving Reliability Standards.

This filing consists of the following:

- This transmittal letter;
- A table of contents;

- A narrative description providing justification for the proposed PER-003-1 Reliability Standard;
- The proposed PER-003-1 Reliability Standard (**Exhibit A**);
- The associated Implementation Plan for the proposed PER-003-1 Reliability Standard (**Exhibit B**);
- Consideration of Stakeholder Comments (**Exhibit C**);
- The Development Record of the proposed PER-003-1 Reliability Standard and the associated Implementation Plan (**Exhibit D**); and
- The Standard Drafting Team Roster for Project 2007-04 Certifying System Operators (**Exhibit E**)

Please contact me if you have any questions regarding this filing.

Respectfully submitted,

/s/ Andrew M. Dressel
Andrew M. Dressel
Attorney for North American
Electric Reliability Corporation

**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 A PERSONNEL PERFORMANCE,
TRAINING, AND QUALIFICATIONS RELIABILITY STANDARD**

Gerald W. Cauley
President and Chief Executive Officer
David N. Cook
Senior Vice President and General Counsel
North American Electric Reliability
Corporation
116-390 Village Boulevard
Princeton, NJ 08540-5721
(609) 452-8060
(609) 452-9550 – facsimile
david.cook@nerc.net

Holly A. Hawkins
Assistant General Counsel for
Standards and Critical Infrastructure
Protection
Andrew M. Dressel
Attorney
North American Electric Reliability
Corporation
1120 G Street, N.W.
Suite 990
Washington, D.C. 20005-3801
(202) 393-3998
(202) 393-3955 – facsimile
holly.hawkins@nerc.net
andrew.dressel@nerc.net

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Exhibit A — Proposed PER-003-1 Reliability Standard

Exhibit B — Implementation Plan for PER-003-1

Exhibit C — Consideration of Stakeholder Comments

Exhibit D — Development Record of the proposed PER-003-1 Reliability Standard and the associated Implementation Plan

Exhibit E — Standard Drafting Team Roster for Project 2007-04 Certifying System Operators

I. INTRODUCTION

The North American Electric Reliability Corporation (“NERC”) hereby provides notice of the following Reliability Standard:

- PER-003-1 — Operating Personnel Credentials

This filing satisfies certain directives the Federal Energy Regulatory Commission (“FERC”) issued in Order No. 693 pertaining to identification of the minimum competencies that must be demonstrated to become and remain a certified operator and to consider grandfathering certification requirements for System Operator personnel as part of the standard development process.¹

The NERC Board of Trustees approved the proposed Reliability Standard on February 17, 2011, and recommended it be added to the set of approved NERC Reliability Standards.

The effective date for the proposed PER-003-1 Reliability Standard will be the first day of the first calendar quarter twelve months after approval of PER-003-1.

Exhibit A to this filing sets forth the proposed Reliability Standard. Although normally included, due to the large number of differences between the proposed PER-003-1 and PER-003-0, development of a redline version is impractical. Therefore, NERC includes in section IV of this filing a description of the changes reflected in the proposed standard. **Exhibit B** contains the Implementation Plan for PER-003-1 which is submitted herein. **Exhibit C** contains the consideration of stakeholder comments that highlights stakeholders’ comments on this standard and NERC’s responses to these stakeholders. **Exhibit D** contains the development record for the proposed PER-003-1 Reliability Standard and the associated Implementation Plan. **Exhibit E** contains the Standard Drafting Team Roster for Project 2007-04 Certifying System Operators

¹ *Mandatory Reliability Standards for the Bulk-Power System*, 118 FERC ¶ 61,218, FERC Stats. & Regs. ¶ 31,242 (2007) (“Order No. 693”) at P 1407-1409.

which was responsible for drafting the proposed PER-003-1 standard and associated Implementation Plan

NERC filed the proposed PER-003-1 Reliability Standard and associated documents with the FERC, and is also filing the proposed PER-003-1 Reliability Standard and associated documents with the other applicable governmental authorities in Canada.

II. NOTICES AND COMMUNICATIONS

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

Gerald W. Cauley
President and Chief Executive Officer
David N. Cook
Senior Vice President and General Counsel
North American Electric Reliability Corporation
116-390 Village Boulevard
Princeton, NJ 08540-5721
(609) 452-8060
(609) 452-9550 – facsimile
david.cook@nerc.net

Holly A. Hawkins
Assistant General Counsel for Standards
and Critical Infrastructure Protection
Andrew M. Dressel
Attorney
North American Electric Reliability
Corporation
1120 G Street, N.W.
Suite 990
Washington, D.C. 20005-3801
(202) 393-3998
(202) 393-3955 – facsimile
holly.hawkins@nerc.net
andrew.dressel@nerc.net

III. BACKGROUND

a. Basis of Proposed Reliability Standard

The proposed PER-003-1 Reliability Standard serves the important reliability goal of establishing a minimum level of competency for System Operators performing the reliability-related tasks of a Reliability Coordinator, Balancing Authority or Transmission Operator that is

necessary for the reliable operation of the BES. The proposed PER-003-1 Reliability Standard improves reliability by:

- requiring System Operators who are filling a Real-time operating position for a Reliability Coordinator, Balancing Authority or Transmission Operator be NERC Certified through the NERC System Operator Certification Program; and
- requiring demonstration of minimum competencies in certain areas dependent upon the operating position being filled.

b. Reliability Standards Development Procedure

NERC develops Reliability Standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC *Standard Processes Manual*, which is incorporated into the Rules of Procedure as Appendix 3A.² NERC's rules provide for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing Reliability Standards.

The development process is open to any person or entity with a legitimate interest in the reliability of the bulk power system. NERC considers the comments of all stakeholders and an affirmative vote of stakeholders and the NERC Board of Trustees is required to approve a Reliability Standard for submission to the applicable governmental authorities.

² NERC's *Reliability Standards Development Procedure* is available on NERC's website at http://www.nerc.com/fileUploads/File/Standards/RSDP_V6_1_12Mar07.pdf. Note that FERC approved the new *Reliability Standard Processes Manual* on September 3, 2010 (FERC Docket No. RR10-12-000), which replaces the *Reliability Standards Development Procedure Version 7* in its entirety. NERC developed this standard in accordance with the *Reliability Standards Development Procedure Version 7* until the *Standard Processes Manual* was approved on September 3, at which time that procedure was used to complete development of the proposed standard.

The work culminating in this filing originated from the directives in FERC Order No. 693.³ In Order No. 693, FERC approved Reliability Standard PER-003-0, and directed as follows:

We find that the Reliability Standard serves an important reliability goal in requiring applicable entities to staff all operating positions that have a primary responsibility for real-time operations or are directly responsible for complying with the Reliability Standards with NERC-certified staff. Accordingly, the Commission approves Reliability Standard PER-003-0. In addition, pursuant to section 215(d)(5) of the FPA and § 39.5(f) of our regulations, the Commission directs the ERO to develop a modification to PER-003-0 through the Reliability Standards development process that: (1) specifies the minimum competencies that must be demonstrated to become and remain a certified operator and (2) identifies the minimum competencies operating personnel must demonstrate to be certified. The Commission also directs the ERO to consider grandfathering certification requirements for transmission operator personnel in the Reliability Standards development process.⁴

In its first directive on this issue, FERC directed that NERC establish a standard that included identification of the minimum competencies operators must demonstrate to become and remain a certified operator and consider grandfathering certification requirements for System Operator personnel as part of the standard development process.⁵ The proposed PER-003-1 Reliability Standard addresses FERC's Order No. 693 directives with an equivalent alternative and with adequate support that fully explains how the alternative produces a result that is as effective as or more effective than the Order No. 693 directives.⁶

The first FERC directive is addressed by inclusion of minimum competency areas that a System Operator must demonstrate proficiency within the requirements. PER-003-1 identifies areas of competency that operators must demonstrate proficiency. This allows the functional entities to ensure that all operators are knowledgeable in all aspects of operation necessary to

³ Order No. 693 at P 1407 -1409.

⁴ *Id.* at P 1409.

⁵ *Id.* at P 1407.

⁶ *Id.* at P 31. In Order No. 693, FERC stated that: "We emphasize that we are not, at this time, mandating a particular outcome by way of these directives, but we do expect the ERO to respond with an equivalent alternative and adequate support that fully explains how the alternative produces a result that is as effective as or more effective than the Commission's example or directive."

perform daily and emergency operations of the BPS identified through a job and task analysis performed by NERC's Personnel Subcommittee. The functional entities are also required to develop a systematic approach to training in accordance with PER-005-1 that is tailored to addresses the reliability needs of that entity.

NERC's System Operator Certification Program provides the mechanism to ensure System Operators are afforded the opportunity to obtain the essential knowledge and skills to operate the BPS. The System Operator Certification Program provides the framework for the examinations used to obtain initial certification in one of four NERC credentials: Transmission Operator; Balancing and Interchange Operator; Balancing, Interchange and Transmission Operator; and Reliability Operator. The System Operator Certification Program awards certification credentials to those individuals who demonstrate that they have attained sufficient knowledge relating to NERC Reliability Standards as well as the basic principles of BPS operations. Initially, this knowledge is tested through a certification exam. The credential must then be maintained by accumulating a specified number of continuing education hours within a specified period of time.⁷

The second directive to consider "grandfathering" certain transmission operator personnel was met when the standards drafting team ("SDT") extensively considered this issue. However, the SDT concluded that grandfathering should not be allowed within this standard. The major factors that the drafting team based its decision to not allow grandfathering are as follows:

1. Certification ensures that System Operators with responsibility for Real-time operations have a minimum level of knowledge that assists in their achieving reliable operations. As

⁷ See System Operator Certification Program Manual (2009). Available at: http://www.nerc.com/files/SOC_Program_Manual_Dec_2009.pdf.

the ERO, NERC has responsibility for ensuring the Real-time operation of the BPS.

Passing a certification examination is NERC's only available method to verify the minimum knowledge level of a System Operator.

2. While a concern was expressed about experienced System Operators not being able to pass an examination, there was no convincing evidence provided to support this concern. Grandfathering would greatly diminish the validity and defensibility of the NERC System Operator Certification Program. The SDT was unable to find evidence that grandfathering would have a positive impact on either the NERC Certification Program or the reliability of the BPS.
3. A concern emerged that industry employers may have labor relations issues due to requiring portions of their workforce to hold a NERC System Operator Certification. The SDT did not find this concern to be persuasive because of the following:
 - a. PER-003-1 applicability impacts the population of System Operators that are already NERC certified under PER-003-0. There should not be any large-scale scope change impacting non-NERC certified personnel. Overall labor relations issues that arose due to the NERC System Operator Certification requirements have, for the most part, already been settled.
 - b. There are several members on the SDT that have experience with the NERC System Operator Certification requirement that is currently enforced on bargaining unit personnel within their organization. Their experience identified that most collective bargaining unit agreements have some provision that addresses regulatory or legal changes that affect the organization personnel.

4. Another concern involved smaller entities being able to retain personnel within their organization once they obtain a NERC System Operator Certification. The concern appears to be that the System Operators would become more “marketable” and would possibly be enticed to leave smaller organizations to join larger organizations that typically have higher pay scales.
 - a. As stated above (remark 3a), the target population for NERC System Operator Certification already hold a NERC Certification. There will not be a significant number of individuals who will become more marketable than they were previously.
 - b. The NERC System Operator Certification Program is designed to ensure that System Operators who make decisions impacting the operation of the BPS possess at least a minimum competency. Whether a System Operator works for a large or small entity, verifying their minimum knowledge level has a very positive impact on the BPS reliability. While personnel retention is an important issue within the industry, reducing requirements on verifying and improving the capabilities of System Operators is not an appropriate corrective action.

The proposed Reliability Standard set out in **Exhibit A** has been developed and approved by industry stakeholders using NERC’s *Reliability Standards Development Procedure* and its replacement, the *NERC Standard Processes Manual*.⁸ A discussion of this process appears in section III.c. of this filing. The proposed PER-003-1 Reliability Standard was approved by the NERC Board of Trustees on February 17, 2011.

⁸ NERC’s *Reliability Standards Development Procedure* and its replacement the *NERC Standards Process Manual* are available on NERC’s website at http://www.nerc.com/fileUploads/File/Standards/RSDP_V6_1_12Mar07.pdf. Note that FERC approved the new *Reliability Standards Processes Manual* on September 3, 2010 (FERC Docket No. RR10-12-000), which replaces the *Reliability Standards Development Procedure Version 7* in its entirety.

IV. JUSTIFICATION OF PROPOSED MODIFICATIONS TO RELIABILITY STANDARDS

a. Section Overview

This section summarizes the development of the proposed PER-003-1 Reliability Standard. The discussion in this section is also intended to demonstrate that the proposed PER-003-1 Reliability Standard is just, reasonable, not unduly discriminatory or preferential and in the public interest. Furthermore, PER-003-1 is an improvement over the previous standard. PER-003-1 addresses FERC's directives in Order No. 693 (as discussed in section III.c. above), ensures that all real-time operators responsible for reliability-related tasks are proficient to perform their role under normal and emergency conditions, and that non-NERC certified personnel performing any reliability-related task of a real-time operating position must be under the direct supervision of a NERC Certified System Operator.⁹

As previously stated, the proposed PER-003-1 Reliability Standard is provided in **Exhibit A**. Due to the substantial differences between the proposed PER-003-1 and PER-003-0, the development of a redline version highlighting changes from the version 0 to the version 1 standard is impractical. Therefore, the changes reflected in the proposed standard are described below. The Implementation Plan for PER-003-1 is provided in **Exhibit B**. NERC's consideration of stakeholders' comments is included in **Exhibit C**. The complete development record for the proposed Reliability Standard and the associated Implementation Plan is provided in **Exhibit D**. The SDT roster for this standard is provided in **Exhibit E**. This extensive development record includes successive drafts of the standard, identification of the ballot pool

⁹ Footnote 1 to Reliability Standard PER-003-1 — Operating Personnel Credentials Standard states that “Non-NERC certified personnel performing any reliability-related task of an operating position must be under the direct supervision of a NERC Certified System Operator stationed at that operating position; the NERC Certified System Operator at that operating position has ultimate responsibility for the performance of the reliability-related tasks.” This ensures that a certified System Operator is always responsible for real-time reliability-related tasks.

members, final ballot results by registered ballot body members, stakeholder comments received during the development of proposed PER-003-1 Reliability Standard and a discussion regarding how stakeholder comments were considered in developing the standard.

The proposed PER-003-1 Reliability Standard requires System Operators who are filling a Real-time operating position for a Reliability Coordinator, Balancing Authority or Transmission Operator to be NERC Certified through the NERC System Operator Certification Program. The proposed standard also requires that System Operators demonstrate minimum competencies necessary for their particular operating position.

The proposed PER-003-1 Reliability Standard contains three requirements. Requirement R1 requires each Reliability Coordinator staff its Real-time operating positions performing Reliability Coordinator reliability-related tasks with System Operators who have demonstrated minimum competency in certain areas by obtaining and maintaining a valid NERC Reliability Operator certificate. Requirement R2 mandates that each Transmission Operator to staff its Real-time operating positions performing Transmission Operator reliability-related tasks with System Operators who have demonstrated minimum competency in certain areas by obtaining and maintaining a valid NERC certificate applicable to that operating position. Finally, Requirement R3 requires each Balancing Authority to staff its Real-time operating positions performing Balancing Authority reliability-related tasks with System Operators who have demonstrated minimum competency in certain areas obtaining and maintaining a valid NERC certificate applicable to that operating position.

b. Demonstration that the proposed Reliability Standard is just, reasonable, not unduly discriminatory or preferential and in the public interest

1. Proposed Reliability Standard is designed to achieve a specified reliability goal

The proposed PER-003-1 Reliability Standard is designed to achieve the specified reliability goal of ensuring that Real-time System Operators possess and maintain a sufficient knowledge level and ability to operate the BPS reliably. This goal is achieved by requiring Real-time System Operators to hold a NERC Certification that is specific to the nature of the functional tasks each applicable System Operator (Reliability Coordinator, Balancing Authority or Transmission operator) performs when operating the BPS.

In critical and safety-related capacities within our society, the personnel that perform key functions are typically among the most important determinates of the success delivering those vital services. Real-time System Operators perform one of those critical and safety-related roles. Real-time System Operators are the personnel who operate the BPS during normal, abnormal and emergency system conditions and assuring their qualifications is an important aspect of promoting system reliability. This Reliability Standard is designed to ensure that the Real-time Reliability Coordinators, Transmission Operators and Balancing Authorities System Operators have demonstrated that they have attained and maintain a required knowledge level directly tied to their job tasks associated with BES operation. The NERC System Operator Certification Program assesses the Real-time operators' knowledge level ensuring that the operators possess at least the minimum competencies to perform the role and then assures the operators' credentials are maintained through regular completion of training programs that enhance their knowledge and capability. This method of assessing and certifying the qualifications of key personnel is very respected and effective and is therefore a very effective method of promoting BPS reliability.

2. Proposed Reliability Standard contains a technically sound method to achieve the goal

The proposed PER-003-1 Reliability Standard contains a technically sound method to strengthen the reliability of the Bulk Electric System by ensuring that System Operators performing the reliability-related tasks of the Reliability Coordinator, Balancing Authority and Transmission Operator are certified through the NERC System Operator Certification Program. In its development of the proposed Reliability Standard, the SDT included in Requirements R1, R2 and R3 “Areas of Competency” for each of the functional entities. These provide the clarity requested by FERC for the framework to identify the minimum competencies for System Operators filling Real-time operating positions. In addition, Requirements R2.2 and R3.2, allow the functional entities the flexibility to utilize System Operators with any of the three listed NERC Certificates to fill designated Real-time operating positions.

Additionally, to address the ambiguities in the existing PER-003-0 standard related to “trainees” in Real-time operations, the standard includes a footnote to explain the responsibilities of NERC Certified System Operators when non-NERC certified personnel are performing any reliability-related task.

The proposed PER-003-1 Reliability Standard has been developed by an SDT with a broad base of Real-time operating experience from entities registered as Reliability Coordinators, Balancing Authorities and Transmission Operators in addition to team members with compliance enforcement and NERC Certificate program maintenance responsibilities. The SDT adhered to NERC’s standards development process allowing for industry comment and ballot of the proposed standard. Extensive industry comments on the standard were received and evaluated through several postings. Many of the comments have been incorporated into the final draft of the standard and have resulted in a refined, high-quality standard.

3. Proposed Reliability Standard is applicable to users, owners, and operators of the bulk power system, and not others

The proposed PER-003-1 Reliability Standard is only applicable to Reliability Coordinators, Balancing Authorities and Transmission Operators. These entities are users, owners, or operators of the bulk power system.

4. Proposed Reliability Standard is clear and unambiguous as to what is required and who is required to comply

Each of the requirements in the proposed PER-003-1 Reliability Standard is clear in identifying the required performance and who is required to comply. Specifically, this standard mandates that all System Operators performing functional entities’ reliability-related tasks must possess a valid NERC Reliability Operator Certificate. This ensures that the operator has demonstrated at least minimum competencies in certain defined areas applicable to the particular operating position. Additionally, the requirements clearly state that all Reliability Coordinators, Transmission Operators and Balancing Authorities must meet this standard.

5. Proposed Reliability Standard includes clear and understandable consequences and a range of penalties (monetary and/or non-monetary) for a violation

The proposed standard includes clear and understandable consequences by assigning each primary requirement a violation risk factor (“VRF”) and a violation severity level (“VSL”). These elements form the basis of an initial value range for the Base Penalty Amount regarding violations of requirements in Reliability Standards, as defined in the ERO Sanction Guidelines. The table below shows the VRFs and VSLs resulting in the indicated range of penalties for violations.

Requirement R1

VRF	Lower VSL	Moderate VSL	High VSL	Severe VSL
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VRF	Lower VSL	Moderate VSL	High VSL	Severe VSL
High	N/A	N/A	N/A	The Reliability Coordinator failed to staff each Real-time operating position performing Reliability Coordinator reliability-related tasks with a System Operator having a valid NERC certificate as defined in Requirement R1.

Requirement R2

VRF	Lower VSL	Moderate VSL	High VSL	Severe VSL
High	N/A	N/A	N/A	The Transmission Operator failed to staff each Real-time operating position performing Transmission Operator reliability-related tasks with a System Operator having a valid NERC certificate as defined in Requirement R2, Part 2.2.

Requirement R3

VRF	Lower VSL	Moderate VSL	High VSL	Severe VSL
High	N/A	N/A	N/A	The Balancing Authority failed to staff each Real-time operating position performing Balancing Authority reliability-related tasks with a System Operator having a valid NERC certificate as defined in Requirement R3, Part 3.2.

6. Proposed Reliability Standard identifies clear and objective criterion or measure for compliance, so that it can be enforced in a consistent and non-preferential manner

The proposed PER-003-1 Reliability Standard identifies clear and objective criteria in the language of the requirements so that the standard can be enforced in a consistent and non-preferential manner. The language in the requirements is unambiguous with respect to the applicable entity expectations. Each requirement in the proposed PER-003-1 Reliability Standard has the same reliability objective; to ensure that a System Operator performing Real-time operating reliability-related tasks is competent to perform such tasks. Therefore, a single measure is sufficient. The measure included in the proposed standard is:

Measure M1 - Each Reliability Coordinator, Transmission Operator and Balancing Authority shall have the following evidence to show that it staffed its Real-time operating positions performing reliability-related tasks with System Operators who have

demonstrated the applicable minimum competency by obtaining and maintaining the appropriate, valid NERC certificate (R1, R2 and R3):

M1.1 A list of Real-time operating positions.

M1.2 A list of System Operators assigned to its Real-time operating positions.

M1.3 A copy of each of its System Operator's NERC certificate or NERC certificate number with expiration date which demonstrates compliance with the applicable Areas of Competency.

M1.4 Work schedules, work logs, or other equivalent evidence showing which System Operators were assigned to work in Real-time operating positions.

7. Proposed Reliability Standard achieves a reliability goal effectively and efficiently, but does not reflect "best practices" without regard to implementation cost

The proposed PER-003-1 Reliability Standard helps the industry achieve the stated goals effectively and efficiently. The proposed standard adds a new element of "Areas of Competency" pertaining to the operation of the BPS to the requirements in the existing approved PER-003-0 Reliability Standard. A System Operator performing reliability-related tasks for the Reliability Coordinator, Transmission Operator or Balancing Authority must demonstrate at least minimum competency within the defined "Areas of Competency." The NERC System Operator Certification Program initially assesses the Real-time System Operators' knowledge and understanding within the defined areas. This knowledge along with the capabilities in the defined "Areas of Competency" are then maintained and enhanced by the completion of regularly scheduled training through the PER-005-1 System Personnel Training Reliability Standard.

The SDT for NERC Project 2007-04 Certifying System Operators determined that most, if not all, System Operators performing reliability-related tasks for Reliability Coordinators, Transmission Operators and Balancing Authorities are currently NERC certified through the current PER-003-0 Reliability Standard which demonstrates a System Operator's minimum competency. Therefore, implementation of the proposed standard should not result in substantial cost increases to Reliability Coordinators, Transmission Operators or Balancing Authorities.

8. Proposed Reliability Standard is not “lowest common denominator,” i.e., does not reflect a compromise that does not adequately protect bulk power system reliability

The proposed Reliability Standard PER-003-1 does not employ a “lowest common denominator.” Rather, the standard adds structure and specificity to the certification of System Operators. It requires Real-time System Operators to hold a NERC Certification that is specific to the nature of the functional tasks that they perform. The proposed standard utilizes the NERC Certification Program's previously developed and implemented certificate hierarchy.

This hierarchy, enshrined in the proposed standard, requires that each System Operator performing Real-time reliability-related tasks demonstrate his or her competency through obtaining and maintaining a valid NERC Operator Certification. In addition, the proposed standard limits the application of certain NERC certificates. For instance, a System Operator performing the reliability-related tasks of a Transmission Operator must possess one of the following NERC certificates: a Reliability Operator certificate; a Balancing, Interchange and Transmission Operator certificate; or, a Transmission Operator certificate. Similarly, under the proposed standard, a System Operator performing the reliability-related tasks of a Balancing Authority must possess one of the following NERC certificates: a Reliability Operator

certificate; a Balancing, Interchange and Transmission Operator certificate; or a Balancing and Interchange Operator certificate.

This utilization of the NERC Certification Program’s previously developed and implemented certificate hierarchy “raises the bar” with respect to the certification and demonstration of competency required to perform the reliability-related tasks of the Reliability Coordinator, Transmission Operator and Balancing Authority Real-time System Operator personnel. As a result, this standard is not the “lowest common denominator” Reliability Standard.

9. Proposed Reliability Standard considers costs to implement for smaller entities but not at consequence of less than excellence in operating system reliability

The proposed PER-003-1 Reliability Standard does not create or allow any differentiation in requirements based on size. All entities, small and large, are expected to comply with this standard in the same manner. The proposed PER-003-1 Reliability Standard authorizes an entity to develop the method that best suits their operation for determining a System Operator’s minimum competency and allows the applicable entities the flexibility to utilize System Operators with one of several NERC Certificates to fill designated Real-time operating positions. Additionally, the PER-003-1 Reliability Standard removes the ambiguities in the existing regulatory approved PER-003-0 Reliability Standard related to “trainees” in Real-time operations. The proposed PER-003-1 Reliability Standard includes a footnote to explain the responsibilities of NERC Certified System Operators when non-NERC certified “trainee” personnel are performing any reliability-related task.

10. Proposed Reliability Standard is designed to apply throughout North America to the maximum extent achievable with a single Reliability Standard while not favoring one area or approach

The proposed PER-003-1 Reliability Standard is a single standard that will be universally applicable in the portions of the United States and Canada that recognize NERC as the ERO. This universal applicability was ensured by involving SDT from various aspects, functions and responsibilities associated with maintaining reliability of the BPS. Managers, supervisors, engineers, operators and training personnel representing Regional Transmission Organizations, Independent System Operators, investor-owned utilities, and Rural Electric Associations which operate within five NERC reliability regions and a portion of Canada were involved in the development of the proposed PER-003-1 Reliability Standard. The proposed PER-003-1 Reliability Standard has been written to identify the minimum areas of competencies that operating personnel must demonstrate to become and remain a certified operator under the Reliability Coordinator, Transmission Operator and Balancing Authority functions.

11. Proposed Reliability Standard causes no undue negative effect on competition or restriction of the grid

The requirements in the proposed PER-003-1 Reliability Standard should cause no undue negative effect on competition or restriction of the grid. The proposed PER-003-1 is written to identify the minimum areas of competencies that operating personnel must demonstrate to become and remain a qualified System Operator under the Reliability Coordinator, Transmission Operator, and Balancing Authority functions. Qualified System Operators help to assure that the system is operated reliably, with a goal of keeping the transmission system available and stable. Keeping the transmission system available and stable enhances the operation and reliability of the grid and does not restrain competition or restrict transmission capability.

12. The implementation time for the proposed Reliability Standard is reasonable

The proposed Implementation Plan for PER-003-1 is reasonable because it allows adequate time for functional entities to obtain the correct certifications. NERC has requested that PER-003-1 become effective the first calendar day of the first calendar quarter twelve months after applicable regulatory approval (see **Exhibit B**). Although some Reliability Coordinators, Transmission Operators or Balancing Authorities may need to obtain different certificates for some of their System Operators, industry stakeholders did not request additional time for the implementation of this standard.

13. The Reliability Standard development process was open and fair

NERC develops Reliability Standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC *Reliability Standards Development Procedure* and its replacement the NERC *Standard Processes Manual*, which is incorporated into the Rules of Procedure as Appendix 3A.¹⁰ NERC's rules provide for reasonable notice and opportunity for public comment, due process, openness and a balance of interests in developing Reliability Standards. The development process is open to any person or entity with a legitimate interest in the reliability of the BPS. NERC considers the comments of all stakeholders and an affirmative vote of stakeholders and the NERC Board of Trustees is required to approve a Reliability Standard for submission to the applicable governmental authorities. The SDT developed this standard by following NERC's standards development process described above.

¹⁰ NERC Rules of Procedure (2011). Available at: http://www.nerc.com/files/NERC_Rules_of_Procedure_EFFECTIVE_20110101.pdf.

14. Proposed Reliability Standard balances with other vital public interests

The proposed PER-003-1 Reliability Standard should not affect any vital public interests beyond promoting electric system reliability. Therefore it is not necessary to balance this Reliability Standard against any other competing public interests. Compliance with this proposed PER-003-1 Reliability Standard supports preventing the instability, uncontrolled separation or cascading outages that may adversely impact the reliability of the interconnection.

15. Proposed Reliability Standard considers any other relevant factors

In the development of this standard, NERC examined this Reliability Standard and determined that no other factors warranted consideration.

c. Violation Risk Factor and Violation Severity Level Assignments

The proposed PER-003-1 Reliability Standard includes VRF and VSL assignments. The ranges of possible penalties for violations of the requirements of this standard are based upon the applicable VRFs and VSLs. Violation penalties will be administered based on the ERO Sanction Guidelines and supporting penalty determination process described in the NERC Sanction Guidelines, included as Appendix 4B to the NERC Rules of Procedure. Each primary requirement is assigned a VRF and a VSL. These elements support the determination of an initial value range for the Base Penalty Amount regarding violations of requirements in Reliability Standards, as defined in the ERO Sanction Guidelines.

Assignment of Violation Risk Factors

The SDT applied the following criteria when proposing VRFs for the requirements in the proposed PER-003-1 Reliability Standard.

High Risk Requirement

A requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

Medium Risk Requirement

A requirement that, if violated, could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. However, violation of a medium risk requirement is unlikely to lead to bulk electric system instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. However, violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk electric system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

Lower Risk Requirement

A requirement that is administrative in nature and a requirement that, if violated, would not be expected to adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system; or, a requirement that is administrative in nature and a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. A planning requirement that is administrative in nature.¹¹

The standard drafting team also considered consistency with the FERC Violation Risk Factor Guidelines for setting VRFs:¹²

Guideline (1) — Consistency with the Conclusions of the Final Blackout Report

The Commission seeks to ensure that Violation Risk Factors assigned to Requirements of Reliability Standards in these identified areas appropriately reflect their historical critical impact on the reliability of the Bulk-Power System.

¹¹ These three levels of risk are defined by NERC and approved by FERC in the *Order on Violation Risk Factors*, 119 FERC ¶61,145 at P9 (May 18, 2007) (“VRF Rehearing Order”), and the *Order on Compliance Filing*, 121 FERC ¶61,179 at Appendix A (November 16, 2007).

¹² See VRF Rehearing Order.

In the VRF Rehearing Order, FERC listed critical areas (from the Final Blackout Report) where violations could severely affect the reliability of the Bulk-Power System:¹³

- Emergency operations
- Vegetation management
- Operator personnel training
- Protection systems and their coordination
- Operating tools and backup facilities
- Reactive power and voltage control
- System modeling and data exchange
- Communication protocol and facilities
- Requirements to determine equipment ratings
- Synchronized data recorders
- Clearer criteria for operationally critical facilities
- Appropriate use of transmission loading relief.

Guideline (2) — Consistency within a Reliability Standard

The Commission expects a rational connection between the sub-Requirement Violation Risk Factor assignments and the main Requirement Violation Risk Factor assignment.

Guideline (3) — Consistency among Reliability Standards

The Commission expects the assignment of Violation Risk Factors corresponding to Requirements that address similar reliability goals in different Reliability Standards would be treated comparably.

Guideline (4) — Consistency with NERC’s Definition of the Violation Risk Factor Level

Guideline (4) was developed to evaluate whether the assignment of a particular Violation Risk Factor level conforms to NERC’s definition of that risk level.

Guideline (5) — Treatment of Requirements that Co-mingle More Than One Obligation

Where a single Requirement co-mingles a higher risk reliability objective and a lesser risk reliability objective, the VRF assignment for such Requirements must not be watered down to reflect the lower risk level associated with the less important objective of the Reliability Standard.

The following discussion addresses how the SDT considered FERC’s VRF Guidelines 2 through 5.¹⁴

¹³ *Id.* at n. 15.

There are three requirements in the proposed PER-003-1 Reliability Standard:

Requirement R1 - Each Reliability Coordinator shall staff its Real-time operating positions performing Reliability Coordinator reliability-related tasks with System Operators who have demonstrated minimum competency in the areas listed by obtaining and maintaining a valid NERC Reliability Operator certificate.

1.1. Areas of Competency

- 1.1.1. Resource and demand balancing
- 1.1.2. Transmission operations
- 1.1.3. Emergency preparedness and operations
- 1.1.4. System operations
- 1.1.5. Protection and control
- 1.1.6. Voltage and reactive
- 1.1.7. Interchange scheduling and coordination
- 1.1.8. Interconnection reliability operations and coordination

VRF for PER-003-1, Requirement R1: High

FERC Guideline 2	This standard utilizes sub-requirements to identify the minimum competencies and the type of NERC Certificate a System Operator must possess. The VRF for this requirement is consistent with others in the standard with regard to relative risk.
FERC Guideline 3	This requirement is consistent with the PER-005 Training Standard. As this requirement addresses who should be allowed to operate the Real-time BES, the subject of certification and training need to go hand-in-hand. As such, it is appropriate

¹⁴ The team chose not to utilize FERC’s VRF Guideline 1, in assigning VRFs because Guideline 1 identifies a list of topics that encompass nearly every topic within the purview of NERC’s Reliability Standards and implies that these requirements should be assigned a “High” VRF.

	that this requirement share the same VRF of High.
FERC Guideline 4	This requirement is related to the Real-time operation of the BES during both normal and abnormal situations. A System Operator that has not shown at least the minimum competency by passing the required NERC Certification Exam could issue orders that could result in instability, separation or cascading failures. As such, the VRF is required to be High.
FERC Guideline 5	This requirement does not co-mingle reliability objectives.

Requirement R2 - Each Transmission Operator shall staff its Real-time operating positions performing Transmission Operator reliability-related tasks with System Operators who have demonstrated minimum competency in the areas listed by obtaining and maintaining one of the following valid NERC certificates:

2.1. Areas of Competency

- 2.1.1. Transmission operations
- 2.1.2. Emergency preparedness and operations
- 2.1.3. System operations
- 2.1.4. Protection and control
- 2.1.5. Voltage and reactive

2.2. Certificates

- Reliability Operator
- Balancing, Interchange and Transmission Operator
- Transmission Operator

VRF for PER-003-1, Requirement R2: High

FERC Guideline 2	This standard utilizes sub-requirements to identify the minimum competencies and the type of NERC Certificate a System Operator must possess. The VRF for this requirement is consistent with others in the standard with regard to relative risk.
FERC Guideline 3	This requirement is consistent with the PER-005 Training Standard. As this requirement addresses who should be allowed to operate the Real-time BES, the subject of certification and training need to go hand-in-hand. As such, it is appropriate that this requirement share the same VRF of High.
FERC Guideline 4	This requirement is related to the Real-time operation of the BES during both normal and abnormal situations. A System Operator that has not shown at least the minimum competency by passing the required NERC Certification Exam could issue orders that could result in instability, separation or cascading failures. As such, the VRF is required to be High.
FERC Guideline 5	This requirement does not co-mingle reliability objectives.

Requirement R3 - Each Balancing Authority shall staff its Real-time operating positions performing Balancing Authority reliability-related tasks with System Operators who have demonstrated minimum competency in the areas listed by obtaining and maintaining one of the following valid NERC certificates:

3.1. Areas of Competency

3.1.1. Resources and demand balancing

3.1.2. Emergency preparedness and operations

3.1.3. System operations

3.1.4. Interchange scheduling and coordination

3.2. Certificates

- Reliability Operator
- Balancing, Interchange and Transmission Operator
- Balancing and Interchange Operator

VRF for PER-003-1, Requirement R3: High

FERC Guideline 2	This standard utilizes sub-requirements to identify the minimum competencies and the type of NERC Certificate a System Operator must possess. The VRF for this requirement is consistent with others in the standard with regard to relative risk.
FERC Guideline 3	This requirement is consistent with the PER-005 Training Standard. As this requirement addresses who should be allowed to operate the Real-time BES, the subject of certification and training need to go hand-in-hand. As such, it is appropriate that this requirement share the same VRF of High.
FERC Guideline 4	This requirement is related to the Real-time operation of the BES during both normal and abnormal situations. A System Operator that has not shown at least the minimum competency by passing the required NERC Certification Exam could issue orders that could result in instability, separation or cascading failures. As such, the VRF is required to be High.
FERC Guideline 5	This requirement does not co-mingle reliability objectives.

Violation Severity Levels

The following discussion addresses the guidelines used by the SDT to develop the VSLs for the proposed standard. This discussion also presents an analysis of how the VSLs meet the FERC VSL Guidelines:¹⁵

Guideline 1: Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance

Compare the VSLs to any prior Levels of Non-compliance and avoid significant changes that may encourage a lower level of compliance than was required when Levels of Non-compliance were used.

Guideline 2: Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties

A violation of a “binary” type requirement must be a “Severe” VSL.

Do not use ambiguous terms such as “minor” and “significant” to describe noncompliant performance.

Guideline 3: Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement

VSLs should not expand on what is required in the requirement.

Guideline 4: Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations

. . . unless otherwise stated in the requirement, each instance of non-compliance with a requirement is a separate violation. Section 4 of the Sanction Guidelines states that assessing penalties on a per violation per day basis is the “default” for penalty calculations.

Requirement R1

Proposed Lower VSL	N/A
Proposed Moderate VSL	N/A
Proposed High VSL	N/A

¹⁵ *Order on Violation Severity Levels Proposed by the Electric Reliability Organization*, 123 FERC ¶ 61, 284 (2008) at P 19-36.

Proposed Severe VSL	The Reliability Coordinator failed to staff each Real-time operating position performing Reliability Coordinator reliability-related tasks with a System Operator having a valid NERC certificate as defined in Requirement R1.
FERC VSL G1 Discussion	No longer applicable given significant changes in standard structure.
FERC VSL G2 Discussion	The VSL is written as a pass/fail VSL, and it has been set at the “Severe” level, meeting guideline 2A. The VSL is written in clear and unambiguous language, meeting Guideline 2B.
FERC VSL G3 Discussion	The VSL aligns with the language of the requirement, and does not add to nor take away from it.
FERC VSL G4 Discussion	The VSL is based on a single violation of the requirement.

Requirement R2

Proposed Lower VSL	N/A
Proposed Moderate VSL	N/A
Proposed High VSL	N/A
Proposed Severe VSL	The Transmission Operator failed to staff each Real-time operating position performing Transmission Operator reliability-related tasks with a System Operator having a valid NERC certificate as defined in Requirement R2, Part 2.2.
FERC VSL G1 Discussion	No longer applicable given significant changes in standard structure.
FERC VSL G2 Discussion	The VSL is written as a pass/fail VSL, and it has been set at the “Severe” level, meeting guideline 2A. The VSL is written in clear and unambiguous language, meeting Guideline 2B.
FERC VSL G3 Discussion	The VSL aligns with the language of the requirement, and does not add to nor take away from it.
FERC VSL G4 Discussion	The VSL is based on a single violation of the requirement.

Requirement R3

Proposed Lower VSL	N/A
Proposed Moderate VSL	N/A
Proposed High VSL	N/A
Proposed Severe VSL	The Balancing Authority failed to staff each Real-time operating position performing Balancing Authority reliability-related tasks with a System Operator having a valid NERC certificate as defined in Requirement R3, Part 3.2.
FERC VSL G1 Discussion	No longer applicable given significant changes in standard structure.
FERC VSL G2 Discussion	The VSL is written as a pass/fail VSL, and it has been set at the “Severe” level, meeting guideline 2A. The VSL is written in clear and unambiguous

	language, meeting Guideline 2B.
FERC VSL G3 Discussion	The VSL aligns with the language of the requirement, and does not add to nor take away from it.
FERC VSL G4 Discussion	The VSL is based on a single violation of the requirement.

c. Local Transmission Control Center Personnel

The SDT considered whether training requirements for local transmission control center operator personnel should be established as part of PER-003-1. Local Control Center Operator Personnel were determined to be beyond the scope of the Standard Authorization Request (“SAR”) for this standard. This issue is the subject of an earlier FERC directive and will be addressed by NERC in the future in Project 2010-01 — Support Personnel Training.¹⁶

V. SUMMARY OF THE RELIABILITY STANDARD DEVELOPMENT PROCEEDINGS

The SAR for proposed Reliability Standard PER-003-1 was initially developed and presented to NERC for posting on July 7, 2007. The SAR drafting team was formed in August 2007. The SAR was posted for two 30-day comment periods. The first comment period was from July 17, 2007 through August 15, 2007. Based on industry stakeholder comments received, the drafting team excluded transmission operators at local control centers and generator operators from those entities that were required to be certified. In addition the drafting team removed the Interchange Authority, Transmission Owner, Generator Owner and Generator Operator from the applicable functions section of the draft SAR. The revised SAR was posted for a second 30-day comment period from January 2, 2008 through January 31, 2008. Based on industry stakeholder comments received, no further modifications to the SAR were necessary and NERC Project

¹⁶ FERC directed NERC to “develop a Reliability Standard, through the ERO’s Reliability Standards development process, conducted pursuant to its Standard Processes Manual, establishing training requirements for local transmission control center operator personnel.” *System Personnel Training Reliability Standards*, 133 FERC ¶ 61,159 (2010)(“Order No. 742”) at P 17.

2007-04 — Certifying System Operators was initiated. The Project 2007-04 – Certifying System Operators SDT was formed in June 2008.

The SDT posted the draft PER-003-1 Reliability Standard for two public comment periods. The first draft standard was posted for an initial 30-day comment period from October 21, 2009 through November 20, 2009. Forty-one sets of comments were submitted in response to the posting, including comments from more than 150 individuals representing over 65 different companies from nine of the ten industry segments. Responding to industry stakeholder critiques the drafting team modified the purpose statement and requirements of the proposed standard to provide additional clarity. The drafting team also added a footnote clarifying that a trainee that is not NERC certified must work under the direct supervision of a NERC certified System Operator and that the NERC certified System Operator would bear ultimate responsibility for the performance of the reliability-related task. Additionally, several of the industry stakeholders raised objections in three areas that the SDT chose to override:

- 1) The inclusion of minimum competencies within the proposed standard. The SDT explained to the objectors that the proposed standard is required to address the FERC directive from Order 693 that the standard must identify the minimum competencies operating personnel must demonstrate to be certified.¹⁷
- 2) Including additional language to clarify the role of continuing education hours in maintaining a valid NERC certificate. The SDT declined to add a reference to CEHs in the standard. The team explained that they believed that a System Operator should maintain his or her certification by the method that the Personnel Certification Governance Committee deems appropriate (currently through earning continuing education hours).

¹⁷ Order No. 693 at P 1408.

- 3) That the VSLs should be graduated. The SDT explained that because the requirements were written in a pass/fail (binary) format, the NERC and FERC VSL guidelines require that binary requirements must be designated “Severe.”

The second draft of the standard was posted for a 45-day public comment period and successive ballot from August 10, 2010 through September 24, 2010. NERC received 33 sets of comments from more than 87 different individuals from approximately 32 companies representing eight of the ten Industry Segments. The majority of the commenters held concerns in three areas:

- 1) The inclusion of minimum competencies within the standard. In response the SDT reiterated their response from the first posting that NERC is required to address the FERC directive from Order 693 that stated that the standard must identify the minimum competencies operating personnel must demonstrate to be certified.¹⁸
- 2) The use of the term “System Operator” within the standard because the NERC definition contained the “Generator Operator” function. In response, the SDT explained that although the NERC definition for “System Operator” includes “Generation Operator” within the parenthetical, the proposed PER-003-1 Reliability Standard clearly states that the standard only applied to the Reliability Coordinator, Transmission Operator and Balancing Authority.
- 3) That the VSLs should be graduated. In response, the SDT reiterated their response from the first posting that because the requirements were written in a pass/fail (binary) format, the NERC and FERC VSL guidelines require a “Severe” VSL designation.

Based on the second round of stakeholder comments, the SDT modified the footnote and Measure M1 to provide further clarity.

¹⁸ See Exhibit C, Consideration of Stakeholder Comments.

The team then finalized the proposed Per-003-1 Reliability Standard, and presented the standard to the NERC Standards Committee for its approval for balloting. NERC began its initial ballot of the draft PER-003-1 Reliability Standard on September 14, 2010. The initial ballot achieved a quorum of 92.73% and a weighted-segment approval of 79.17%, achieving the requisite two-thirds weighted-segment vote needed for approval.

Following the successive ballot that ended on September 24, 2010, the SDT made conforming changes to the draft standard in response to stakeholder comments. The changes clarified the language in the proposed standard, but did not modify the scope, intent or applicability of any of the requirements. Therefore the modifications were not considered “significant,” and did not require a full re-posting and balloting period. Then a ten-day re-circulation ballot was initiated on December 2, 2010. On December 13, 2010, the ballot resulted in an affirmative vote, achieving a quorum of 95.50% and a weighted segment approval of 86.91%. On February 17, 2011, the NERC Board of Trustees unanimously approved the proposed PER-003-1 Reliability Standard.

Respectfully submitted,

Gerald W. Cauley
President and Chief Executive Officer
David N. Cook
Senior Vice President and General Counsel
North American Electric Reliability Corporation
116-390 Village Boulevard
Princeton, NJ 08540-5721
(609) 452-8060
(609) 452-9550 – facsimile
david.cook@nerc.net

/s/ Andrew M. Dressel

Holly A. Hawkins
Assistant General Counsel for Standards
and Critical Infrastructure Protection
Andrew M. Dressel
Attorney
North American Electric Reliability
Corporation
1120 G Street, N.W.
Suite 990
Washington, D.C. 20005-3801
(202) 393-3998
(202) 393-3955 – facsimile
holly.hawkins@nerc.net
andrew.dressel@nerc.net

EXHIBITS A – E

(Available on the NERC Website at

http://www.nerc.com/fileUploads/File/Filings/Attachments_PER-003-1.pdf)