



January 21, 2010

**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 three revised Reliability Standards and one new definition to be added to the NERC Glossary of Terms, as well as the retirement of five existing approved Reliability Standards and one definition.

NERC submits notice of the following revised Reliability Standards contained in

**Exhibit A** to this petition:

- EOP-001-1<sup>1</sup> — Emergency Operations Planning
- EOP-005-2 — System Restoration from Blackstart Resources

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<sup>1</sup> NERC recognizes that revised standard EOP-001 is included in this filing as well as in the Operate within Interconnection Reliability Operating Limits (IROL) filing being filed contemporaneously. The modifications proposed to the EOP-001 standard in this filing and in the IRO filing include changes unique to each project. NERC includes in Exhibit A a proposed Version 1 of EOP-001 that contains only the changes developed by the System Restoration and Blackstart project. In the event the relevant governmental authorities act on the System Restoration and Blackstart filing before the IRO filing or if the IRO filing is remanded before the System Restoration and Blackstart filing is acted upon, then Exhibit A Version 1 will be the appropriate standard. In the event the relevant governmental authorities approve the IRO filing first, NERC also includes in Exhibit B Version 2 of EOP-001 that contains both the IRO team directed changes and those proposed in this filing. Because EOP-001-0 is the currently-approved standard in effect, the changes proposed in this filing are applied against this Version 0. Should the IRO filing be affirmatively acted upon first, EOP-001-2 as provided in Exhibit B will be the applicable standard.

- EOP-006-2 — System Restoration Coordination

NERC also submits notice of the proposed definition of *Blackstart Resource*.

This filing also includes notice of the retirement of five existing Reliability Standards and the definition of *Blackstart Capability Plan* from the NERC Glossary of Terms:

- EOP-001-0 — Emergency Operations Planning
- EOP-005-1 — System Restoration Plans
- EOP-006-1 — Reliability Coordination — System Restoration
- EOP-007-0 — Establish, Maintain, and Document a Regional Blackstart Capability Plan
- EOP-009-0 — Documentation of Blackstart Generating Unit Test Results

The proposed revised Reliability Standards were approved by the NERC Board of Trustees on August 5, 2009. EOP-001-1, EOP-005-2 and EOP-006-2 and the definition of *Blackstart Resource* will be made effective in accordance with the effective date provisions contained in the proposed Reliability Standards. EOP-001-0, EOP-005-1, EOP-006-1, EOP-007-0 and EOP-009-0 will be retired, as well as the definition of *Blackstart Capability Plan* concurrent with the implementation of EOP-001-1, EOP-005-2 and EOP-006-2 and the associated definition of *Blackstart Resource*.

NERC's notice consists of the following:

- This transmittal letter;
- A table of contents for the entire notice;
- A narrative description justifying the proposed Reliability Standards;
- Reliability standards EOP-001-1, EOP-005-2, and EOP-006-2 submitted for approval (**Exhibit A**);
- Reliability Standard EOP-001-2 (to be substituted for proposed EOP-001-1 in the event NERC's IRO Reliability Standards filing is approved by the

relevant governmental authorities before the authorities act on EOP-001-1)  
(**Exhibit B**);

- Matrix of FERC Directives and Industry Comments Considered (**Exhibit C**);
- Standard Drafting Team Roster (**Exhibit D**); and
- The complete development record of the proposed revised Reliability Standards (**Exhibit E**).

Please contact the undersigned if you have any questions.

Respectfully submitted,

/s/ Holly A. Hawkins

Holly A. Hawkins

*Attorney for North American Electric  
Reliability Corporation*

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

**NORTH AMERICAN ELECTRIC )  
RELIABILITY CORPORATION )**

**NOTICE OF FILING OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION  
OF THREE EMERGENCY PREPAREDNESS AND OPERATIONS  
RELIABILITY STANDARDS AND ONE NEW GLOSSARY TERM AND FOR  
RETIREMENT OF FIVE EXISTING RELIABILITY STANDARDS AND ONE  
GLOSSARY TERM**

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January 21, 2010

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**Exhibit A** — Reliability Standards

**Exhibit B** — Reliability Standard EOP-001-2 Proposed for Approval (to be substituted for proposed EOP-001-1 in the event the relevant governmental authorities approve NERC's IRO Reliability Standards filing before acting on EOP-001-1)

**Exhibit C** — Matrix of FERC Directives and Industry Comments Considered

**Exhibit D** — Standard Drafting Team Roster

**Exhibit E** — Record of Development of Proposed Reliability Standards

## **I. INTRODUCTION**

The North American Electric Reliability Corporation (“NERC”) hereby submits notice of three revised Reliability Standards: EOP-001-1<sup>1</sup> — Emergency Operations Planning; EOP-005-2 — System Restoration from Blackstart Resources; and EOP-006-2 — System Restoration Coordination, as well as the concurrent retirement of five existing Reliability Standards: EOP-001-0 — Emergency Operations Planning; EOP-005-1 — System Restoration Plans; EOP-006-1 — Reliability Coordination — System Restoration; EOP-007-0 — Establish, Maintain, and Document a Regional Blackstart Capability Plan; and EOP-009-0 — Documentation of Blackstart Generating Unit Test Results.

The NERC Board of Trustees approved these Reliability Standards on August 5, 2009. **Exhibit A** to this filing sets forth the proposed Reliability Standards. **Exhibit B** contains a provisional Version 2 of proposed EOP-001 that is included in this filing for the reasons outlined in footnote 3. **Exhibit C** contains the Matrix of FERC Directives and Industry Comments Considered in the development of these standards. **Exhibit D** contains the standard drafting team roster of those people that developed the proposed Reliability Standards. **Exhibit E** contains the complete development record of the proposed Reliability Standards.

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<sup>1</sup> NERC recognizes that revised standard EOP-001 is included in this filing as well as in the Operate within Interconnection Reliability Operating Limits (IRO) filing being filed contemporaneously. The modifications proposed for the EOP-001 standard in this filing and in the IRO filing include changes unique to each project. NERC includes in Exhibit A a proposed Version 1 of EOP-001 that contains only the changes developed by the System Restoration and Blackstart project. In the event the relevant governmental authorities act on the System Restoration and Blackstart filing before the IRO filing or if the IRO filing is remanded before the System Restoration and Blackstart filing is acted upon, then Exhibit A Version 1 will be the appropriate standard to approve. In the event the relevant governmental authorities approve the IRO filing first, NERC also includes in Exhibit B Version 2 of EOP-001 that contains both the IRO team directed changes and those proposed in this filing. Because EOP-001-0 is the currently-approved standard in effect, the changes proposed in this filing are applied against this Version 0. Should the IRO filing be affirmatively acted upon first, EOP-001-2 as provided in Exhibit B will be the applicable standard.

NERC filed these proposed Reliability Standards with the Federal Energy Regulatory Commission (“FERC”) on December 31, 2009, and is also filing these proposed Reliability Standards 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:

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## **III. BACKGROUND**

### **a. Basis for Proposed Changes to Reliability Standards**

The proposed set of Reliability Standards, EOP-005-2 and EOP-006-2,<sup>2</sup> are intended to ensure that a set of coordinated plans are in place and that facilities and personnel are prepared to engage in system restoration using designated Blackstart Resources. During the implementation of the system restoration plan activities, the

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<sup>2</sup> Proposed EOP-001-1 removes a previously approved requirement germane to system restoration activities that was incorporated into proposed EOP-005-2 and EOP-006-2. No other conforming changes are being made. Therefore, proposed EOP-001-1 is not included in the discussion regarding system restoration activities.

responsible entities are required to focus on maintaining reliability while restoring the interconnection. The proposed standards apply to Transmission Operators, Generator Operators, Reliability Coordinators, Transmission Owners and Distribution Providers specifically identified in the Transmission Operator's restoration plan.

The proposed EOP-005-2 and EOP-006-2 Reliability Standards represent significant revision and improvement from the current set of enforceable standards. The project to develop the proposed EOP-005-2 and EOP-006-2 Reliability Standards involved upgrading the overall quality of the standards, eliminating gaps and ambiguity in the requirements, eliminating "fill-in-the-blank" standards, and addressing FERC Order No. 693 directives,<sup>3</sup> as highlighted herein and discussed in detail below.

- The proposed revisions now clearly delineate the responsibilities of the Reliability Coordinator and Transmission Operator in the restoration process and restoration planning. This is intended to eliminate confusion regarding roles and responsibilities during the restoration process. Specifically, the role of the Reliability Coordinator in overseeing the formulation of the Transmission Operator's restoration plans has been defined. This approach results in wide-area coordination of restoration plans and elimination of potential local conflicts.
- There are now specific requirements for what must be included in a restoration plan, how and when it needs to be updated and approved, what needs to be provided to operators, and what training is necessary for personnel involved in restoration processes. The standard also explains what constitutes restoration and when the restoration phase is complete.
- The role of the Regional Entity (RE) has been eliminated by assigning those responsibilities to other defined functional entities.
- The standard defines the necessary content and periodicity of testing Blackstart Resources, as well as mandated record-keeping.
- Participation in situation drills and simulations is spelled out.
- Restoration requirements have been concentrated in the revised EOP-005-2 and EOP-006-2 standards by transferring the restoration plan requirement from EOP-001-0 to these standards.

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<sup>3</sup> See *Mandatory Reliability Standards for the Bulk-Power System*, 18 CFR Part 40, Docket No. RM06-16-000 (March 16, 2007) ("Order No. 693") at PP 627-630, 636-638.



- Balancing Authorities have been removed as applicable entities in the revised standards because the Standard Drafting Team determined that the Reliability Coordinator and Transmission Operator are in control of the system until the restoration phase is complete and balancing resources and demand are returned to the Balancing Authority.<sup>4</sup>

NERC also submits notice of the proposed definition of the term “Blackstart Resource” and the concurrent retirement of the term “Blackstart Capability Plan.” The proposed definition of “Blackstart Resource” is:

**Blackstart Resource:** A generating unit(s) and its associated set of equipment which has the ability to be started without support from the System or is designed to remain energized without connection to the remainder of the System, with the ability to energize a bus, meeting the Transmission Operator’s restoration plan needs for real and reactive power capability, frequency and voltage control, and that has been included in the Transmission Operator’s restoration plan.

Additionally, the proposed revisions move requirements from five standards into two standards. EOP-005-1, EOP-006-1, EOP-007-0 and EOP-009-0 are proposed to be retired in their entirety and EOP-001-0 is proposed to be modified with conforming changes.

The changes in these proposed standards reflect consideration of a number of issues that were captured in NERC’s original Operating Policies and Planning Standards, referred to as the “Version 0” standards. Also considered were issues noted during the development of compliance measures for the Phase III and Phase IV Reliability Standards developed subsequent to the Version 0 standards and the development of Violation Risk Factors in 2006.

In addition, the Standard Drafting Team (SDT) addressed several directives from FERC Order No. 693. These directives are presented below and are discussed in greater detail later in this filing:

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<sup>4</sup> Balancing Authorities continue to have responsibilities under Reliability Standard EOP-001.

- EOP-005-1 — Develop a modification that identifies time frames for training and review of restoration plan requirements to simulate contingencies and prepare operators for anticipated and unforeseen events.<sup>5</sup>
- EOP-006-1 — Develop a modification to EOP-006-1 that ensures that the Reliability Coordinator, which is the highest level of authority responsible for reliability of the bulk power system, is involved in the development and approval of System restoration plans.<sup>6</sup>
- EOP-007-0 — Consider the suggestions offered by Edison Electric Institute (EEI), FirstEnergy and Midwest Reliability Organization (MRO). These suggestions pertain to assigning compliance obligations to those that directly provide the data and other information instead of the Regional Entity, that the Reliability Coordinator, not the Regional Entity, should be responsible for the Regional blackstart plan for its area of responsibility, that the plans recognize that nuclear units must have priority access to off-site power for safety reasons, and that the definition of a blackstart unit be revised to mean a “diesel, hydro, pump storage, or the combustion turbine generating unit that is used to provide cranking power to a larger steam generating unit designed to restore load” or to mean a “larger steam generating unit designed to restore load.”<sup>7</sup>
- EOP-009-0 — Consider the suggestions offered by Xcel that the Reliability Standard should provide details on what constitutes a blackstart test and FirstEnergy’s thoughts that EOP-009-0 should be consolidated with EOP-007-0.<sup>8</sup>

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<sup>5</sup> Order No. 693 a P 630.

<sup>6</sup> *Id.* at P 636.

<sup>7</sup> *Id.* at PP 644-648.

<sup>8</sup> *Id.* at P 672.

## **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 *Reliability Standards Development Procedure*, which is incorporated into the Rules of Procedure as Appendix 3A. 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.

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

The proposed Reliability Standards set out in **Exhibit A** have been developed and approved by industry stakeholders using NERC's *Reliability Standards Development Procedure*. They were approved by the NERC Board of Trustees on August 5, 2009.

## **c. Progress in Improving Proposed Reliability Standards**

NERC continues to develop new and revised Reliability Standards that address the issues NERC identified in its initial filing of proposed Reliability Standards on April 4, 2006, the concerns noted in the FERC Staff Report issued on May 11, 2006, and the directives FERC has included in multiple subsequent orders pertaining to NERC's Reliability Standards.<sup>9</sup> NERC has incorporated these activities into its *Reliability*

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<sup>9</sup> *Mandatory Reliability Standards for the Bulk-Power System*, 118 FERC ¶ 61,218, FERC Stats. & Regs. ¶ 31,242 (2007) ("Order No. 693"), *order on reh'g, Mandatory Reliability Standards for the Bulk-Power System*, 120 FERC ¶ 61,053 ("Order No. 693-A") (2007).

*Standards Development Plan: 2009-2011*, submitted on May 5., 2009 and its *Reliability Standards Development Plan: 2010-2012*, submitted on December 17, 2009.

#### **IV. JUSTIFICATION OF PROPOSED RELIABILITY STANDARDS**

This section summarizes the development of the proposed Reliability Standards, identifies the incremental changes from EOP-001-0 — Emergency Operations Planning; the revisions to EOP-005-1 — System Restoration Plans, and EOP-006-1 — Reliability Coordination — System Restoration; and the retirement of EOP-001-0— Emergency Operations Planning, EOP-005-1 — System Restoration Plans, EOP-006-1 — Reliability Coordination — System Restoration, EOP-007-0 — Establish, Maintain, and Document a Regional Blackstart Capability Plan, and EOP-009-0 — Documentation of Blackstart Generating Unit Test Results. This section also includes evidence that the proposed Reliability Standards are just, reasonable, not unduly discriminatory or preferential and in the public interest.

The standard drafting team roster is provided in **Exhibit C**. The complete development record for the proposed Reliability Standards is included in **Exhibit D**. This record includes for the proposed standards the implementation plan, the ballot pool, the final ballot results by registered ballot body members, stakeholder comments received during the development of the Reliability Standards, and an explanation regarding how those comments were considered in developing the Reliability Standards. Additionally, the definition of “Blackstart Resource” that pertains to EOP-005-2 is included in **Exhibit A**.

The purpose of EOP-001-1, which applies to Transmission Operators and Balancing Authorities, is to develop, maintain, and implement a set of plans to mitigate

operating emergencies that are to be coordinated with other Transmission Operators, Balancing Authorities, and the Reliability Coordinator.

Requirement R2.4 of EOP-001-1, which requires the Transmission Operator and Balancing Authority to develop, maintain, and implement a set of plans for system restoration, is proposed for deletion because the revised EOP-005-2 and EOP-006-2 now incorporate and expand upon this requirement. No other changes are being proposed for any requirements, measures, Violation Risk Factors, or Violation Severity Levels in EOP-001-1. The implementation plan for this standard requires the entity to be compliant twenty-four months after the first day of the first calendar quarter following applicable regulatory approval. In jurisdictions where no regulatory approval is required, all requirements go into effect twenty-four months after Board of Trustees adoption.

The purpose of proposed EOP-005-2 is to ensure plans, Facilities, and personnel are prepared to enable system restoration from blackstart resources to assure reliability is maintained during restoration and priority is placed on restoring the Interconnection. The proposed EOP-005-2 standard applies primarily to Transmission Operators and Generator Operators and consists of eighteen requirements and associated sub-requirements, which include the following:

- the need for a formally documented restoration plan and what must be included in the plan;
- a provision for distributing the restoration plan to affected entities and their operators;
- restoration plan review and update requirements and annual submission to its Reliability Coordinator;
- testing of the restoration plan;

- requirements regarding when to implement the restoration plan and how to determine when the restoration plan is complete;
- requirements regarding coordination on resynchronization with the Reliability Coordinator;
- Blackstart Resource testing requirements and documentation;
- operator training requirements;
- participation in Reliability Coordinator drills, exercises and simulations; and
- Blackstart Resource Agreements and documentation.

The purpose of proposed EOP-006-2 is to ensure that plans are established and personnel are prepared to enable effective coordination of the system restoration process to ensure reliability is maintained during restoration and priority is placed on restoring the Interconnection. The proposed EOP-006-2 standard applies to Reliability Coordinators and consists of ten requirements and associated sub-requirements, which address the following topics:

- the need for a formally documented restoration plan and what must be included in it;
- distribution of the restoration plan to affected entities and their operators;
- restoration plan review and update requirements;
- monitoring and control of the overall restoration process and progress;
- coordination on resynchronization with the Transmission Operator;
- operator training; and
- conducting situation drills, exercises and simulations.

EOP-007-0 and EOP-009-0 are proposed to be retired in their entirety. All of the requirements from these two standards are now included in EOP-005-2 and EOP-006-2.

The implementation plan for these standards requires an entity to be compliant twenty-four months after the first day of the first calendar quarter following applicable regulatory approval. In those jurisdictions where no regulatory approval is required, all requirements go into effect twenty-four months after NERC Board of Trustees adoption.

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

**1. Proposed Reliability Standards are designed to achieve a specified reliability goal**

The proposed Reliability Standards, EOP-005-2 — System Restoration from Blackstart Resources, and EOP-006-2 — System Restoration Coordination, specifically establish the requirements for having restoration plans and all of the various elements such as approvals, coordination, testing, training, documentation and drills required to prepare an applicable entity for system restoration responsibilities.

**2. Proposed Reliability Standards contain a technically sound method to achieve the goal**

The proposed Reliability Standards contain technically sound methods to achieve the goal of ensuring that a set of coordinated plans are in place and that facilities and personnel are prepared to engage in system restoration using designated Blackstart Resources. These standards describe:

- what must be included in the restoration plan, demonstrated in EOP-005-2, Requirement R1, and EOP-006-2, Requirement R1;
- when to update the restoration plan, demonstrated in EOP-005-2;
- to whom the restoration plan is to be distributed, specified in EOP-005-2, Requirements R2 and R5, and EOP-006-2, Requirements R2 and R6;
- validation requirements, included in EOP-005-2, Requirement R6;

- training and testing, which is included in EOP-005-2, Requirements R9, R10, R11, R16, and R17, and EOP-006-2, Requirement R9;
- participation in Reliability Coordinator drills, included in EOP-005-2, Requirements R12 and R18;
- coordinating the plans of all entities within its footprint and “supervising” the actual restoration, including providing specific direction and approval of when to tie Systems together, included in EOP-006-2, Requirements R7 and R8; and
- conducting restoration drills and simulations, which is specified in EOP-006-2, Requirement R10.

**3. Proposed Reliability Standards are applicable to users, owners, and operators of the bulk power system, and not others**

The proposed Reliability Standards are applicable to users, owners and operators of the bulk power system, and not others. The proposed standards are specifically applicable to Reliability Coordinators, Transmission Operators, Transmission Owners, Generator Operators, and Distribution Providers as identified in the Transmission Operator’s restoration plan. Each of these entities is clearly a user, owner or operator of the bulk power system.

**4. Proposed Reliability Standards are clear and unambiguous regarding what is required and who is required to comply**

The proposed Reliability Standards are clear and unambiguous regarding what is required and who is required to comply. Each requirement clearly states the applicable entity(ies) and what they are required to do. For example, the revised standards now clearly state when restoration efforts begin and when they end (*see* EOP-005-2, Requirement R1 and EOP-006-2, Requirement R1). They also define the division of effort and responsibilities between the Transmission Operator, Generator Operator, and



the Reliability Coordinator (see EOP-005-2, Requirements R3, R4, R8, R13, and R15 and EOP-006-2, Requirement R7).

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

The proposed Reliability Standards include clear and understandable consequences. For example, each primary requirement is assigned a Violation Risk Factor (“VRF”) and a Violation Severity Level (“VSL”) which support the determination of a base penalty amount for violations of the requirements, as required by the NERC Sanction Guidelines. NERC will submit a comprehensive VSL guideline analysis later this year.

**6. Proposed Reliability Standards identify clear and objective criterion or measures for compliance, so that it can be enforced in a consistent and non-preferential manner**

The proposed Reliability Standards identify clear and objective criteria to support enforcement in a consistent and non-preferential manner. Each requirement has an associated measure, and each requirement clearly identifies the expected performance that will serve as the basis for development of compliance enforcement objectives, typically provided through the Reliability Standard Audit Worksheets. The language used in the requirements clearly identifies what is expected of the applicable entity.

**7. Proposed Reliability Standards achieve a reliability goal effectively and efficiently — but do not necessarily have to reflect “best practices” without regard to implementation cost**

The proposed Reliability Standards achieve their reliability goal effectively and efficiently. Expanding the requirements to meet the reliability objectives of the standards was carefully considered in the *Reliability Standards Development Process*, and the

standards were structured to address the standards' objectives without unduly burdening applicable entities. For example, the field operations personnel training requirements were carefully tailored to apply only to personnel involved in performing unique tasks in restoration, as compared to their normal duties, in order to avoid unnecessary training costs. Similarly, required participation in and conduct of drills and simulations has been limited to a level considered appropriate to retain the necessary skills to effectively implement restoration plans. Testing of Blackstart Resources has also been staged over three years.

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

The proposed Reliability Standards are more stringent than current requirements in several areas. Documentation (EOP-005-2, Requirements R1, R2, R3, R4, R5, R13 and R14; and EOP-006-2, Requirements R1, R2 and R6), testing (EOP-005-2, Requirements R6, R9 and R16), training (EOP-005-2, Requirements R10, R11 and R17; and EOP-006-2, Requirement R9), and required drill participation (EOP-005-2, Requirements R12 and R19; and EOP-006-2, Requirement R10) all reflect significant increases in responsibilities and expectations for applicable entities from the previous version of the standards.

For example, EOP-005-1, Requirements R7 and R10 require the Transmission Operator to verify the restoration procedures by actual testing or simulation, and that the Transmission Operator shall demonstrate at least once every five years that the blackstart generating units in the plan can perform their intended functions. Proposed EOP-005-2, Requirement R6, “raises the bar” by adding much greater specificity to the expectations

of these tests by requiring the Transmission Operator to verify at least every five years through actual events, steady state and dynamic simulations, or testing that the plan accomplishes its intended function. Greater specificity is provided in sub-parts 6.1 through 6.3 that require the verification of the capability of Blackstart Resources to meet the Real and Reactive Power requirements of the Cranking Paths and the dynamic capability to supply initial loads, and the location and magnitude of loads and the capability of generating resources required to control voltages and frequency within acceptable operating limits. Requirement R9 in EOP-005-2 requires testing the Blackstart Resource at least once every three years and includes required tests for the ability to start the unit when isolated with no support from the Bulk Electric System and the ability to energize a bus during the test. Requirement R16 requires the Generator Operator of Blackstart Resources to perform such tests and maintain testing records to be made available within 30 days of the request from the Reliability Coordinator and Transmission Operator.

Similarly on the topic of training, EOP-005-1, Requirement R6 simply states that each Transmission Operator shall train its operating personnel in the implementation of the restoration plan that includes simulated exercises if practical. EOP-005-2, Requirements R10, R11, and R17, as well as EOP-006-2, Requirement R9 provide much greater specificity to the training expectations. Requirement R10 requires a Transmission Operator to include annual system restoration training in its operations training program that shall include training on the system restoration plan and the coordination with the Reliability Coordinator and Generator Operators, restoration priorities, building of cranking paths, and synchronizing re-energized sections of the system. Requirement R11

requires each Transmission Operator, and each applicable Transmission Owner and Distribution Provider, to provide a minimum of two hours system restoration training every two years to field switching personnel who perform tasks unique to system restoration activities. Requirement R17 similarly requires a minimum two hours per two year obligation to train the Generator Operator personnel with Blackstart Resources.

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

The proposed Reliability Standards do not differentiate among entities based on size or cost. These requirements apply equally to all entities with responsibility for restoration tasks.

**10. Proposed Reliability Standards are 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 Reliability Standards are designed to apply throughout North America. The standards as drafted propose no regional differences or variances.

**11. Proposed Reliability Standards cause no undue negative effect on competition or restriction of the grid**

There is no basis for anticipating that the proposed Reliability Standards will adversely affect competition or restrict available transmission capability beyond what is necessary for reliability.

**12. The implementation time for the proposed Reliability Standards is reasonable**

The proposed Reliability Standards identify the proposed effective date for those standards. As noted, the proposed Reliability Standards are more stringent in several areas: documentation (EOP-005-2, Requirements R1, R2, R3, R4, R5, R13 and R14; and EOP-006-2, Requirements R1, R2 and R6), testing (EOP-005-2, Requirements R6, R9 and R16), training (EOP-005-2, Requirements R10, R11 and R17; and EOP-006-2, Requirement R9), and required drill participation (EOP-005-2, Requirements R12 and R19; EOP-006-2, Requirement R10.). NERC believes the proposed effective date represents a reasonable time for all entities to adequately prepare for compliance with the new requirements. Compliance is already required for Reliability Standards EOP-001-0, EOP-005-1, EOP-006-1, EOP-007-0, and EOP-009-0.

**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*, which was incorporated into the Rules of Procedure as Appendix 3A. 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. 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 NERC Board of Trustees is required to approve a Reliability Standard for submission to the applicable governmental authorities.

The proposed Reliability Standards set out in **Exhibit A** have been developed and approved by industry stakeholders using the process found in NERC's *Reliability Standards Development Procedure*, and were approved by the NERC Board of Trustees on August 5, 2009 for filing with the applicable governmental authorities. Therefore, NERC has utilized its approved standard development process in good faith and in a manner that is open and fair.

**14. Proposed Reliability Standards balance with other vital public interests**

These standards are focused on ensuring that system restoration is implemented and that Interconnection reliability is maintained. No other environmental, social, or other goals are reflected or considered in these standards.

**15. Proposed Reliability Standards consider any other relevant factors**

An overview of the issues raised in consideration of the proposed standards, included in Exhibit C, is presented in a matrix and demonstrates how industry comments from previous work, as well as directives from Order No. 693, were addressed in this standard development project.

**V. Violation Risk Factors and Violation Severity Levels**

The proposed Reliability Standards include VRFs and VSLs that are specific to individual Requirements. The ranges of penalties for violations of standards are based on the applicable VRFs and VSLs and will be administered based on the Sanctions Table and supporting penalty determination process described in NERC Sanction Guidelines, which can be found in Appendix 4B of NERC's Rules of Procedure. Consistent with NERC's September 10, 2009 informational filing, assignments of VRFs and VSLs were

made at the main requirement level of each standard. Further analysis of the VSL assignments will be presented in the comprehensive VSL Guideline review filing, due to be filed later this year.

VRF assignments were based on the criteria stated in the guidelines:

- High — A requirement that, if violated, could directly cause or contribute to Bulk Power System (BPS) instability, separation, or a cascading sequence of failures, or could place the BPS at an unacceptable risk of instability, separation, or cascading failures.
- Medium — A requirement that, if violated, could directly affect the electrical state or the capability of the BPS, or the ability to effectively monitor and control the BPS. However, violation of a medium risk requirement is unlikely to lead to BPS instability, separation, or cascading failures.
- Low — A requirement that, if violated, would not be expected to adversely affect the electrical state or capability of the BPS, or the ability to effectively monitor and control the BPS. A requirement that is administrative in nature.

Utilizing these criteria, the VRFs for EOP-005-2 were assigned as follows:

- A high VRF was assigned to those requirements dealing with the actual operation of the system during restoration and the need for an approved restoration plan (Requirements R1, R7 and R8).
- A medium VRF was assigned to those requirements dealing with the ‘infrastructure’ required to support those requirements that received a high VRF. These items, while certainly important in their own right, were not seen as directly leading to BPS instability. Therefore, a medium VRF was assigned to Requirements R3, R4, R6, R9, R10, R11, R12, R13, R14, R15, R16, R17 and R18.
- A lower VRF was assigned to Requirements R2 and R5 which were seen as mainly administrative in nature.

The VRFs for EOP-006-2 were assigned in a similar manner with the following result:

- A high VRF was assigned to Requirements R1, R7, and R8 because these items were seen as having a direct bearing on BPS instability.
- A medium VRF was assigned to Requirements R3, R4, R5, R9 and R10 on the basis that these items were not considered as directly leading to BPS instability.
- A lower VRF was given to Requirements R2 and R6 because these requirements are primarily administrative in nature.

## **VI. SUMMARY OF THE RELIABILITY STANDARD DEVELOPMENT PROCEEDINGS**

### **a. Development History**

On October 26, 2006, NERC received, and the Standards Committee accepted, a standards authorization request (“SAR”) for Project 2006-03 which included revisions to EOP-005-1, EOP-006-1, EOP-007-0 and EOP-009-0. The SAR was posted for two industry comment opportunities and then approved by the Standards Committee for standard development on April 18, 2007.

The assigned standard drafting team posted the draft standards for a 45-day industry comment period from August 15, 2007 to September 28, 2007. In response, 46 sets of comments were received from representatives of 60 organizations and 9 of the 10 industry segments. Comments mainly dealt with applicability issues, training, and the role of the Reliability Coordinator in the oversight and approval of plans. The standard drafting team revised the draft standards accordingly and re-posted for industry comment from January 7, 2008 to February 5, 2008. As a result of the re-post, 44 sets of comments were received from 60 organizations representing 9 of the 10 industry segments.



Comments received were mainly focused on clarification of the intent of the standard drafting team with certain requirements, and included comments on the following:

- Timing of the restoration task — commenters questioned when the timing begins and when it ends.
- Training requirements — commenters questioned why field personnel have to be trained as a requirement of this standard rather than including these training requirements in the PER standards.
- The timeframe suggested in the implementation plan — several commenters thought a 24 month implementation timeframe was too aggressive.

The standard drafting team again revised the draft standards to accommodate industry concerns and posted them for a third time between April 15, 2008 and May 29, 2008. In response to the third posting, there were 29 sets of comments from 50 organizations representing 8 of the 10 industry segments. Comments dealt with the role of the Balancing Authority, if any; clarifications on who needed to be trained; and on the proposed definition of Blackstart Resource. The standard drafting team elected to post the revised standards again between October 21, 2008 and November 18, 2008. Most of the commenters agreed that the draft standards were ready for balloting, and the NERC Standards Committee approved the standards for balloting.

During the development process, the standard drafting team faced several key decision points:

- Does the Balancing Authority have responsibilities during restoration?  
The standard drafting team decided that the Reliability Coordinator and the Transmission Operator have primary responsibility during

restoration and that the Balancing Authority will pick up its normal balancing duties after restoration is completed.

- Should the standards specify a minimum Blackstart Resource level?  
The standard drafting team decided that there was no reasonable minimum that could be set at a national level as this level is a regional variable.
- Should the standard drafting team specify a maximum time to restore the system? Again, the team decided that there was no single national number that can be enforced because there are too many regional variables to consider.

NERC conducted an initial ballot from April 14, 2009 through April 23, 2009.

With an 89.81 percent quorum participating in the ballot, the proposed Reliability Standards achieved a weighted segment vote of 76.63 percent. There were 63 negative ballots submitted for the initial ballot, 41 of which included a comment, thereby initiating the need for a recirculation ballot.

There were three main themes to the comments from the initial balloting:

1. Reliability Coordinator approval of the restoration plan — Commenters continued to object to the Reliability Coordinator being involved in the development and approval of the Transmission Operator's restoration plan.
2. Timing requirements of Reliability Coordinator approval of the Transmission Operators plans — Commenters noted a potential start-up problem that the Reliability Coordinators and Transmission Operators will have to coordinate to address.
3. Training — Commenters continued to express concern that restoration training was addressed in the EOP standards instead of the PER standards. (FERC Order

693 requires, however, that restoration training be included in the restoration standards.)

The standard drafting team addressed all of the ballot comments, and no changes were made to the standards.

The standard drafting team posted its Consideration of Comments reports in response to the initial ballot comments on May 5, 2009, and NERC conducted a recirculation ballot from May 6, 2009 through May 18, 2009. With a 92.08 percent quorum participating in the recirculation ballot, the proposed Reliability Standard achieved a weighted segment vote of 75.39 percent. The proposed Reliability Standard achieved the required two-thirds weighted segment vote and at least a 75 percent quorum of the ballot pool. The NERC Board of Trustees approved the proposed Reliability Standards during its August 5, 2009 meeting.

Respectfully submitted,

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**Exhibits A – E**

(Available on the NERC Website at

[http://www.nerc.com/fileUploads/File/Filings/System\\_Restoration\\_Attachments.pdf](http://www.nerc.com/fileUploads/File/Filings/System_Restoration_Attachments.pdf))