

## Standard Development Roadmap

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

### Development Steps Completed:

1. Standards Committee approves SAR for posting on December 1, 2004.
2. SAR Drafting Team posted SAR for comments on December 7, 2004.
3. SAR Drafting Team responds to comments, revises SAR, and posts revised SAR for comments on February 17, 2006.
4. SAR Drafting Team responds to comments and revises SAR on May 15, 2006.
5. Standards Committee approves development of Standard on May 15, 2006.
6. The Standards Authorization Committee appointed the Standard Drafting Team on June 21, 2006.
7. Standards Drafting Team posted draft standard for comment on September 27, 2006.
8. Standards Drafting Team responded to comments and posted the revised standard on August 15, 2007.
9. Standard Drafting Team responded to comments and posted the revised standard for comment on February 15, 2008.
10. Standards Drafting Team responded to comments and posted the revised standard for comment on June 18, 2008.
11. Standards Drafting Team responded to comments from the fourth posting and will request the Standards Committee to move the standard forward to balloting on September 15, 2008.

### Proposed Action Plan and Description of Current Draft:

This is the fifth version of the proposed standard and its associated implementation plan that has been posted for industry comments. The drafting team will be requesting the Standards Committee to move the standard forward to balloting.

### Future Development Plan:

Anticipated Actions	Anticipated Date
1. Respond to comments on the fourth draft of the proposed standard.	September 15, 2008
2. Obtain the Standards Committee's approval to move the standard forward to balloting.	September 15, 2008
3. Post the standard and implementation plan for a 30-day pre-ballot review.	September 17, 2008
4. Conduct an initial ballot for ten days.	October 17, 2008
5. Respond to comments submitted with the initial ballot.	November 1, 2008

6. Conduct a recirculation ballot for ten days.	November 11, 2008
7. Post for a 30-day preview for board.	November 21, 2008
8. BOT adoption.	December 22, 2008

## A. Introduction

1. **Title:** System Personnel Training
2. **Number:** PER-005-1
3. **Purpose:** To ensure that System Operators performing real-time, reliability-related tasks on the North American Bulk Electric System (BES) are competent to perform those reliability-related tasks. The competency of System Operators is critical to the reliability of the North American Bulk Electric System.
4. **Applicability:**
  - 4.1. **Functional Entities:**
    - 4.1.1 Reliability Coordinator.
    - 4.1.2 Balancing Authority.
    - 4.1.3 Transmission Operator.
5. **Proposed Effective Date for Regulatory Approvals:**
  - 5.1. In those jurisdictions where regulatory approval is required, Requirement R1 and Requirement R2 shall become effective on the first day of the first calendar quarter, 24 months after applicable regulatory approval. In those jurisdictions where no regulatory approval is required, Requirement R1 and Requirement R2 shall become effective on the first day of the first calendar quarter, 24 months after Board of Trustees adoption.
  - 5.2. In those jurisdictions where regulatory approval is required, Requirement R3 shall become effective on the first day of the first calendar quarter after applicable regulatory approval. In those jurisdictions where no regulatory approval is required, Requirement R3 shall become effective on the first day of the first calendar quarter after Board of Trustees adoption.
  - 5.3. In those jurisdictions where regulatory approval is required Sub-requirement R3.1 shall become effective on the first day of the first calendar quarter, 36 months after applicable regulatory approval. In those jurisdictions where no regulatory approval is required, the Sub-requirement R3.1 shall become effective on the first day of the first calendar quarter, 36 months after Board of Trustees adoption.

## B. Requirements

- R1. Each Reliability Coordinator, Balancing Authority and Transmission Operator shall use a systematic approach to training to establish a training program for the BES company-specific reliability-related tasks performed by its System Operators and shall implement the program. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
  - R1.1. Each Reliability Coordinator, Balancing Authority and Transmission Operator shall create a list of BES company-specific reliability-related tasks performed by its System Operators.
    - R1.1.1. Each Reliability Coordinator, Balancing Authority and Transmission Operator shall update its list of BES company-specific reliability-related tasks performed by its System Operators each calendar year to identify new or modified tasks for inclusion in training.
  - R1.2. Each Reliability Coordinator, Balancing Authority and Transmission Operator shall design and develop learning objectives and training materials based on the task list created in R1.1.

- R1.3.** Each Reliability Coordinator, Balancing Authority and Transmission Operator shall deliver the training established in R1.2.
- R1.4.** Each Reliability Coordinator, Balancing Authority and Transmission Operator shall conduct an annual evaluation of the training program established in R1, to identify any needed changes to the training program and shall implement the changes identified.
- R2.** Each Reliability Coordinator, Balancing Authority and Transmission Operator shall verify each of its System Operator's capabilities to perform each assigned task identified in R1.1 at least one time. [*Violation Risk Factor: High*] [*Time Horizon: Long-term Planning*]
  - R2.1.** Within six months of a modification of the BES company-specific reliability-related tasks, each Reliability Coordinator, Balancing Authority and Transmission Operator shall verify each of its System Operator's capabilities to perform the new or modified tasks.
- R3.** At least every 12 months each Reliability Coordinator, Balancing Authority and Transmission Operator shall provide each of its System Operators with at least 32 hours of emergency operations training applicable to its organization that reflects emergency operations topics, which includes system restoration using drills, exercises or other training required to maintain qualified personnel. [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning*]
  - R3.1.** Each Reliability Coordinator, Balancing Authority and Transmission Operator that has operational authority or control over Facilities with established IROls or has established operating guides or protection systems to mitigate IROL violations shall provide each System Operator with emergency operations training using simulation technology such as a simulator, virtual technology, or other technology that replicates the operational behavior of the BES during normal and emergency conditions.

### **C. Measures**

- M1.** Each Reliability Coordinator, Balancing Authority and Transmission Operator shall have available for inspection evidence of using a systematic approach to training to establish and implement a training program, as specified in R1.
  - M1.1** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have available for inspection its company-specific reliability-related task list, with the date of the last review and/or revision, as specified in R1.1.
  - M1.2** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have available for inspection its learning objectives and training materials, as specified in R1.2.
  - M1.3** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have available for inspection System Operator training records showing the names of the people trained, the title of the training delivered and the dates of delivery to show that it delivered the training, as specified in R1.3.
  - M1.4** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have available for inspection evidence (such as instructor observations, trainee feedback, supervisor feedback, course evaluations, learning assessments, or internal audit results) that it performed an annual training program evaluation, as specified in R1.4
- M2.** Each Reliability Coordinator, Balancing Authority and Transmission Operator shall have available for inspection evidence to show that it verified that each of its System Operators is

capable of performing each assigned task identified in R1.1, as specified in R2. This evidence can be documents such as training records showing successful completion of tasks with the employee name and date; supervisor check sheets showing the employee name, date, and task completed; or the results of learning assessments.

- M3.** Each Reliability Coordinator, Balancing Authority and Transmission Operator shall have available for inspection training records that provide evidence that each System Operator has obtained 32 hours of emergency operations training, as specified in R3.

**M3.1** Each Reliability Coordinator, Balancing Authority and Transmission Operator shall have available for inspection training records that provide evidence that each System Operator received emergency operations training using simulation technology, as specified in R3.1.

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Enforcement Authority**

For Reliability Coordinators and other functional entities that work for their Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

For entities that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

#### **1.2. Compliance Monitoring Period and Reset**

Not Applicable.

#### **1.3. Compliance Monitoring and Enforcement Processes:**

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

#### **1.4. Data Retention**

Each Reliability Coordinator, Balancing Authority and Transmission Operator shall keep data or evidence to show compliance for three years or since its last compliance audit, whichever time frame is the greatest, unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

If a Reliability Coordinator, Balancing Authority and Transmission Operator is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

#### **1.5. Additional Compliance Information**

None.

2. Violation Severity Levels

R#	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	None	<p>The responsible entity failed to provide evidence that it updated its company-specific reliability-related task list to identify new or modified tasks each calendar year (R1.1.1)</p> <p>OR</p> <p>The responsible entity failed to provide evidence of evaluating its training program to identify needed changes to its training program(s). (R1.4)</p>	<p>The responsible entity failed to design and develop learning objectives and training materials based on the BES company specific reliability related tasks. (R1.2)</p>	<p>The responsible entity failed to prepare a company-specific reliability-related task list (R1.1)</p> <p>OR</p> <p>The responsible entity failed to deliver training based on the BES company specific reliability related tasks. (R1.3)</p>
R2	None	<p>The responsible entity verified at least 90% but less than 100% of its System Operators' capabilities to perform each assigned task from its list of BES company-specific reliability-related tasks. (R2)</p>	<p>The responsible entity verified at least 70% but less than 90% of its System Operators' capabilities to perform each assigned task from its list of BES company-specific reliability-related tasks (R2)</p> <p>OR</p> <p>The responsible entity failed to verify its system operator's capabilities to perform each new or modified task within six months of making a modification to its BES company-specific reliability-related task list. (R2.1)</p>	<p>The responsible entity verified less than 70% of its System Operators' capabilities to perform each assigned task from its list of BES company-specific reliability-related tasks. (R2)</p>
R3	None	<p>The responsible entity provided at least 32 hours of emergency operations training to at least 90% but less than 100% of their System Operators. (R3)</p>	<p>The responsible entity provided at least 32 hours of emergency operations training to at least 70% but less than 90% of its System Operators. (R3)</p>	<p>The responsible entity provided 32 hours of emergency operations training to less than 70% of its System Operators (R3)</p>

R#	Lower VSL	Moderate VSL	High VSL	Severe VSL
				OR The responsible entity did not include simulation technology replicating the operational behavior of the BES in its emergency operations training. (R3.1)

**E. Regional Variances**

None.

**Version History**

Version	Date	Action	Change Tracking