

### **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. Version 1 of SAR posted for comment from November 6, 2006 to December 5, 2006
2. Version 2 of the SAR posted for comment from February 15, 2007 to March 16, 2007
3. SAR approved on April 30, 2007
4. First posting of revised standard on February 7, 2008
5. Second posting of revised standard on August 26, 2008

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

The SDT has established a schedule of meetings and conference calls that allows for steady progress through the standards development process in anticipation of completing their assignment in 2Q09. The current draft is the third iteration of the revision of the existing standard EOP-008.

#### **Future Development Plan:**

<b>Anticipated Actions</b>	<b>Anticipated Date</b>
1. Submit standard for balloting.	May 2009
2. Submit standard for recirculation balloting.	June 2009
3. Submit standard to BOT.	July 2009
4. Submit to regulatory authorities.	August 2009

**Definitions of Terms Used in Standard**

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

**There are no new or revised definitions proposed in this standard revision.**

**A. Introduction**

1. **Title:** Loss of Control Center Functionality
2. **Number:** EOP-008-1
3. **Purpose:** Ensure continued reliable operations of the Bulk Electric System (BES) in the event that a control center becomes inoperable.
4. **Applicability:**
  - 4.1. **Functional Entity**
    - 4.1.1. Reliability Coordinator.
    - 4.1.2. Transmission Operator.
    - 4.1.3. Balancing Authority.

**Effective Date:** The first day of the first calendar quarter twenty-four months after applicable regulatory approval. In those jurisdictions where no regulatory approval is required, the standard shall become effective on the first day of the first calendar quarter twenty-four months after Board of Trustees adoption.

**B. Requirements**

- R1. Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have a current Operating Plan describing the manner in which it ensures reliable operations of the BES in the event that its primary control center becomes inoperable. This Operating Plan for backup functionality shall include the following, at a minimum: [*Violation Risk Factor = Medium*] [*Time Horizon = Operations Planning*]
  - R1.1. The location and method of implementation for providing backup functionality for a prolonged period of time.
  - R1.2. A summary description of the elements required to support the backup functionality. These elements shall include, at a minimum:
    - R1.2.1. Tools and applications that allow visualization capabilities that ensure that operating personnel have situational awareness of the BES.
    - R1.2.2. Data communications.
    - R1.2.3. Voice communications.
    - R1.2.4. Power source(s).
    - R1.2.5. Physical and cyber security.
  - R1.3. An Operating Process for keeping the backup functionality consistent with the primary control center.
  - R1.4. Operating Procedures, including decision authority, for use in determining when to implement the Operating Plan for backup functionality.
  - R1.5. A transition period between the loss of primary control center functionality and the time to fully implement the backup functionality that is less than or equal to two hours.
  - R1.6. An Operating Process describing the actions to be taken during the transition period between the loss of primary control center functionality and the time to

fully implement the backup functionality elements identified in Requirement R1.2. The Operating Process shall include at a minimum:

- R1.6.1.** A list of all entities to notify when there is a change in operating locations.
- R1.6.2.** Actions to manage the risk to the BES during the transition from primary to backup functionality as well as during outages of the primary or backup functionality.
- R1.7.** Identification of the roles for personnel involved during the initiation and implementation of the Operating Plan for backup functionality.
- R2.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have a copy of its current Operating Plan for backup functionality available at its primary control center and at the location supporting backup functionality. [*Violation Risk Factor = Lower*] [*Time Horizon = Operations Planning*]
- R3.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator directing BES operations through other entities shall ensure that backup functionality exists for the BES operations performed through those other entities. [*Violation Risk Factor = Medium*] [*Time Horizon = Operations Planning*]
- R4.** Each Reliability Coordinator shall have a backup control center facility (provided through its own dedicated backup facility or at another entity's control center with certified Reliability Coordinator operators) that provides the functionality required for maintaining compliance with all Reliability Standards that depend on primary control center functionality. To avoid requiring a tertiary facility, a backup facility is not required during: [*Violation Risk Factor = Medium*] [*Time Horizon = Operations Planning*]
  - R4.1.** Planned outages of the primary or backup facilities of two weeks or less
  - R4.2.** Unplanned outages of the primary or backup facilities
- R5.** Each Balancing Authority and Transmission Operator shall have backup functionality (provided either through a backup control center facility or contracted services) that includes monitoring, control, logging, and alarming sufficient for maintaining compliance with all Reliability Standards that depend on a Balancing Authority and Transmission Operator's primary control center functionality respectively. To avoid requiring tertiary functionality, backup functionality is not required during: [*Violation Risk Factor = Medium*] [*Time Horizon = Operations Planning*]
  - R5.1.** Planned outages of the primary or backup functionality of two weeks or less
  - R5.2.** Unplanned outages of the primary or backup functionality
- R6.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator, shall annually review and approve its Operating Plan for backup functionality. [*Violation Risk Factor = Lower*] [*Time Horizon = Operations Planning*]
  - R6.1.** An update and approval of the Operating Plan for backup functionality shall take place within sixty calendar days of any changes in capabilities described in Requirement R1.

- R7.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have primary and backup capabilities that do not depend on each other or any single data center for any functionality required to maintain compliance with Reliability Standards that depend on the primary control functionality. [*Violation Risk Factor = Medium*] [*Time Horizon = Operations Planning*]
- R8.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall conduct and document results of an annual test of its Operating Plan that demonstrates: [*Violation Risk Factor = Medium*] [*Time Horizon = Operations Planning*]
  - R8.1.** The transition time between the loss of primary control center functionality and the time to fully implement the backup functionality.
  - R8.2.** The backup functionality for a minimum of two continuous hours.
- R9.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator that has experienced a loss of its primary or backup capability and that anticipates that the loss of primary or backup capability will last for more than six calendar months shall provide a plan to its Reliability Assurer within six calendar months of the date when the functionality is lost, showing how it will re-establish backup capability. [*Violation Risk Factor = Medium*] [*Time Horizon = Operations Planning*]

**C. Measures**

- M1.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have a dated, current, in force Operating Plan for backup functionality in accordance with Requirement R1, in electronic or hardcopy format.
- M2.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have a dated, current, in force copy of its Operating Plan for backup functionality in accordance with Requirement R2, in electronic or hardcopy format, available at its primary control center and at the location supporting backup functionality.
- M3.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator directing BES operations through other entities shall provide evidence that it has ensured that backup functionality exists for the BES operations performed through those other entities, for backup functionality in accordance with Requirement R3.
- M4.** Each Reliability Coordinator shall provide dated evidence that it has a backup control center facility (provided through its own dedicated backup facility or at another entity's control center with certified Reliability Coordinator operators) that provides the functionality required for maintaining compliance with all Reliability Standards that depend on primary control center functionality in accordance with Requirement R4.
- M5.** Each Balancing Authority and Transmission Operator shall provide dated evidence that its backup functionality (provided either through a backup control center facility or contracted services) includes monitoring, control, logging, and alarming sufficient for maintaining compliance with all Reliability Standards that depend on a Balancing Authority or Transmission Operator's primary control center functionality respectively in accordance with Requirement R5.
- M6.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator, shall have evidence that it's dated, current, in force Operating Plan for backup functionality, in electronic or hardcopy format, has been reviewed and approved annually and that it

has been updated within sixty calendar days of any changes to the capabilities described in Requirement R1 in accordance with Requirement R6.

**M7.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall have dated evidence that its primary and backup capabilities do not depend on each other or any common facility for any functionality required to maintain compliance with Reliability Standards that depend on the primary control functionality in accordance with Requirement R7.

**M8.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall provide evidence such as dated records, that it has completed and documented its annual test of its Operating Plan for backup functionality, in accordance with Requirement R8.

**M9.** Each Reliability Coordinator, Balancing Authority, and Transmission Operator that has experienced a loss of their primary or backup capability and that anticipates that the loss of primary or backup capability will last for more than six calendar months shall provide evidence that a plan has been submitted to its Reliability Assurer within six calendar months of the date when the functionality is lost showing how it will re-establish backup capability in accordance with Requirement R9.

## **D. Compliance**

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

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

Regional Entity.

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

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**

The Reliability Coordinator, Balancing Authority, and Transmission Operator shall retain data or evidence to show compliance as identified unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall retain their dated, current, in force Operating Plan for backup functionality for the current year and three previous years in accordance with Measurement M1.
- Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall retain a dated, current, in force copy of its Operating Plan for backup

functionality, with evidence of its last issue, available at its primary control center and at the location supporting backup functionality, for the current year, in accordance with Measurement M2.

- Each Reliability Coordinator, Balancing Authority, and Transmission Operator directing BES operations through other entities shall retain its dated, current, in force Operating Plan for backup functionality, providing evidence that it has ensured that backup functionality exists for the BES operations performed through those other entities for the current year and three previous years, in accordance with Measurement M3.
- Each Reliability Coordinator shall retain dated evidence for the time period since its last compliance audit, that it has demonstrated that it has a backup control center facility (provided through its own dedicated backup facility or at another entity's control center with certified Reliability Coordinator operators) in accordance with requirement R4 that provides the functionality required for maintaining compliance with all Reliability Standards that depend on primary control center functionality in accordance with Measurement M4.
- Each Balancing Authority and Transmission Operator shall retain dated evidence for the time period since its last compliance audit, that it has demonstrated that its backup functionality (provided either through a backup control center facility or contracted services) in accordance with requirement R5 includes monitoring, control, logging, and alarming sufficient for maintaining compliance with all Reliability Standards that depend on a Balancing Authority and Transmission Operator's primary control center functionality respectively in accordance with Measurement M5.
- Each Reliability Coordinator, Balancing Authority, and Transmission Operator, shall retain evidence for the current year and three previous years, that its dated, current, in force Operating Plan for backup functionality, has been reviewed and approved annually and that it has been updated within sixty calendar days of any changes to the capabilities described in Requirement R1 in accordance with Measurement M6.
- Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall retain dated evidence for the current year and for any Operating Plan for backup functionality in force since its last compliance audit, that its primary and backup capabilities do not depend on each other or any common facility for any functionality required to maintain compliance with Reliability Standards that depend on the primary control functionality in accordance with Measurement M7.
- Each Reliability Coordinator, Balancing Authority, and Transmission Operator shall retain evidence for the current year and one previous year, such as dated records, that it has tested its Operating Plan for backup functionality, in accordance with Measurement M8.
- Each Reliability Coordinator, Balancing Authority, and Transmission Operator that has experienced a loss of their primary or backup capability and that anticipates that the loss of primary or backup capability would last for more than six calendar months shall retain evidence for the current in force document

and any such documents in force since its last compliance audit that a plan has been submitted to its Reliability Assurer within six calendar months of the date when the functionality is lost showing how it will re-establish backup capability in accordance with Measurement M9.

**1.5. Additional Compliance Information**

None.

**2. Violation Severity Levels**



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R#	Lower	Moderate	High	Severe
R1.	The Reliability Coordinator, Balancing Authority, or Transmission Operator has a current Operating Plan for backup functionality but the plan is missing one of the sub-requirements or the plan does not reflect the date of its last issuance.	The Reliability Coordinator, Balancing Authority, or Transmission Operator has a current Operating Plan for backup functionality but the plan is missing two of the sub-requirements.	The Reliability Coordinator, Balancing Authority, or Transmission Operator has a current Operating Plan for backup functionality but the plan is missing three or more of the sub-requirements or is not compliant with Requirement R1.5.	The Reliability Coordinator, Balancing Authority, or Transmission Operator does not have a current Operating Plan for backup functionality.
R2.	The Reliability Coordinator, Balancing Authority, or Transmission Operator has an Operating Plan for backup functionality available at all of its control locations but at one location it is not the current plan.	The Reliability Coordinator, Balancing Authority, or Transmission Operator has an Operating Plan for backup functionality available at all of its control locations but at all locations it is not the current plan.	N/A	The Reliability Coordinator, Balancing Authority, or Transmission Operator has an Operating Plan for backup functionality but no version of the plan is available at all of its control locations.
R3.	The Reliability Coordinator, Balancing Authority, or Transmission Operator directing BES operations through other entities has not ensured against the loss of such entity's control functionality that is depended upon for compliance with one or more Requirements in the Reliability Standards having a Lower VRF in its Operating Plan for backup functionality.	The Reliability Coordinator, Balancing Authority, or Transmission Operator directing BES operations through other entities has not ensured against the loss of such entity's control functionality that is depended upon for compliance with one or more Requirements in the Reliability Standards having a Medium VRF in its Operating Plan for backup functionality.	The Reliability Coordinator, Balancing Authority, or Transmission Operator directing BES operations through other entities has not ensured against the loss of such entity's control functionality that is depended upon for compliance with one or more Requirements in the Reliability Standards having a High VRF in its Operating Plan for backup functionality.	The Reliability Coordinator, Balancing Authority, or Transmission Operator directing BES operations through other entities has not ensured against the loss of any such entity's control functionality in its Operating Plan for backup functionality.
R4.	The Reliability Coordinator has demonstrated that it has a backup control center facility (provided through its own dedicated backup facility or at another entity's control	The Reliability Coordinator has demonstrated that it has a backup control center facility (provided through its own dedicated backup facility or at another entity's	The Reliability Coordinator has demonstrated that it has a backup control center facility (provided through its own dedicated backup facility or at another entity's	The Reliability Coordinator has not demonstrated that it has a backup control center facility (provided through its own dedicated backup facility or at another entity's

**Standard EOP-008-1 — Loss of Control Center Functionality**

R#	Lower	Moderate	High	Severe
	center with certified Reliability Coordinator operators) in accordance with Requirement R4 but it does not provide the functionality required for maintaining compliance with one or more of the Requirements in the Reliability Standards applicable to the Reliability Coordinator that depend on the primary control center functionality and which have a Lower VRF.	control center with certified Reliability Coordinator operators) in accordance with Requirement R4 but it does not provide the functionality required for maintaining compliance with one or more of the Requirements in the Reliability Standards applicable to the Reliability Coordinator that depend on the primary control center functionality and which have a Medium VRF.	control center with certified Reliability Coordinator operators) in accordance with Requirement R4 but it does not provide the functionality required for maintaining compliance with one or more of the Requirements in the Reliability Standards applicable to the Reliability Coordinator that depend on the primary control center functionality and which have a High VRF.	control center with certified Reliability Coordinator operators) in accordance with Requirement R4.
R5.	The Balancing Authority or Transmission Operator has demonstrated that it has backup functionality (provided either through a backup control center facility or contracted services) in accordance with Requirement R5 but it does not include monitoring, control, logging, and alarming sufficient for maintaining compliance with one or more of the Requirements in the Reliability Standards applicable to a Balancing Authority and Transmission Operator respectively that depend on the primary control center functionality and which have a Lower VRF.	The Balancing Authority or Transmission Operator has demonstrated that it has backup functionality (provided either through a backup control center facility or contracted services) in accordance with Requirement R5 but it does not include monitoring, control, logging, and alarming sufficient for maintaining compliance with one or more of the Requirements in the Reliability Standards applicable to a Balancing Authority and Transmission Operator respectively that depend on the primary control center functionality and which have a Medium VRF.	The Balancing Authority or Transmission Operator has demonstrated that it has backup functionality (provided either through a backup control center facility or contracted services) in accordance with Requirement R5 but it does not include monitoring, control, logging, and alarming sufficient for maintaining compliance with one or more of the Requirements in the Reliability Standards applicable to a Balancing Authority and Transmission Operator respectively that depend on the primary control center functionality and which have a High VRF.	The Balancing Authority or Transmission Operator has not demonstrated that it has backup functionality (provided either through a backup control center facility or contracted services) in accordance with Requirement R5.
R6.	The Reliability Coordinator, Balancing Authority, or Transmission Operator, has evidence that it's dated, current, in force Operating Plan for	N/A	The Reliability Coordinator, Balancing Authority, or Transmission Operator, has evidence that it's dated, current, in	The Reliability Coordinator, Balancing Authority, or Transmission Operator, does not have evidence that it's dated,

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R#	Lower	Moderate	High	Severe
	<p>backup functionality, was reviewed and approved but it was not done in one calendar year or that it was updated more than sixty calendar days and less than or equal to ninety calendar days after any changes to the capabilities described in Requirement R1.</p>		<p>force Operating Plan for backup functionality, with evidence of its last issue, was reviewed and approved but it was not done in two calendar years or more or that it was updated more than ninety calendar days after any changes to the capabilities described in Requirement R1.</p>	<p>current, in force Operating Plan for backup functionality was reviewed and approved.</p>
R7.	N/A	N/A	N/A	<p>The Reliability Coordinator, Balancing Authority, or Transmission Operator’s evidence does not demonstrate that its primary and backup capabilities do not depend on each other or any common facility for the functionality required to maintain compliance with Reliability Standards that depend on the primary control functionality.</p>
R8.	<p>The Reliability Coordinator, Balancing Authority, or Transmission Operator has annually tested its Operating Plan for backup functionality, but one of the following occurred:                      1) the demonstration was for less than two continuous hours,                      2) it has failed to demonstrate that the transition time period is less than or equal to two hours. or                      3) test results were not documented.</p>	<p>The Reliability Coordinator, Balancing Authority, or Transmission Operator has annually tested its Operating Plan for backup functionality, but two of the following occurred:                      1) the demonstration was for less than two continuous hours,                      2) it has failed to demonstrate that the transition time period is less than or equal to two hours, or                      3) test results were not documented.</p>	<p>The Reliability Coordinator, Balancing Authority, or Transmission Operator has annually tested its Operating Plan for backup functionality, but all three of the following occurred:                      1) the demonstration was for less than two continuous hours,                      2) it has failed to demonstrate that the transition time period is less than or equal to two hours, and                      3) test results were not documented.</p>	<p>The Reliability Coordinator, Balancing Authority, or Transmission Operator has not annually tested its Operating Plan for backup functionality.</p>

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R#	Lower	Moderate	High	Severe
R9.	<p>The Reliability Coordinator, Balancing Authority, or Transmission Operator that has experienced a loss of their primary or backup capability and that anticipates that the loss of primary or backup capability would last for more than six calendar months has provided evidence that a plan has been submitted to its Reliability Assurer showing how it will re-establish backup capability but it was submitted in more than six calendar months.</p>	N/A	N/A	<p>The Reliability Coordinator, Balancing Authority, or Transmission Operator that has experienced a loss of their primary or backup capability and that anticipates that the loss of primary or backup capability would last for more than six calendar months has not submitted a plan to its Reliability Assurer showing how it will re-establish backup.</p>

**E. Regional Variances**

None.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
1	TBD	Revisions for Project 2006-04	Major re-write to accommodate changes noted in project file