

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

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 second iteration of the revision of the existing standard EOP-008.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Respond to comments from first posting of standard.	May 2008
2. Submit second revision of standard.	July 2008
3. Respond to comments from second posting of standard.	November 2008
4. Submit third revision of standard.	December 2008
5. Submit standard for balloting.	March 2009
6. Submit standard for recirculation balloting.	April 2009
7. Submit standard to BOT.	April 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 with control of facilities that are designated as Critical Assets or with defined Intereconnection Reliability Operating Limits (IROLs)~~
 - 4.1.2. Transmission Operator operating Facilities at 200 kV or above, or non-radial Facilities above 100 kV, or Facilities demonstrated by the Regional Entity to be critical to the reliability of the Bulk Electric System (BES).
 - 4.1.3. Balancing Authority.
5. **Effective Date:** ~~TBD~~ All requirements of EOP-008-1 become effective 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 applicable Transmission Operator shall have an 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 high level~~An overview 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 ~~current~~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 ~~including, at a minimum:~~
- ~~**R1.4.1.** Criteria for evacuation of the primary control center including the decision authority for initiating the Operating Plan for backup functionality and the Operating Process for initiation of backup functionality~~
- R1.5.** ~~Criteria for returning operations support to the primary control center including the decision authority and the Operating Process for returning to the primary control center~~A transition period between the loss of primary control center functionality and the time to fully implement the backup plan and get backup functionality up and running that is less than 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 get backup functionality up and running. The Operating Process shall include:
- 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/backup functionality.
- R1.7.** Identification of the roles for ~~all involved~~ personnel involved during the initiation and implementation of the Operating Plan for backup functionality ~~and for the return to the primary control center.~~
- R2.** ~~A~~Each Reliability Coordinator, Balancing Authority, and applicable Transmission Operator shall have a copy of ~~theits~~ Operating Plan for backup functionality ~~shall be~~ located in ~~theits~~ primary control center and at the location supporting backup functionality. *[Violation Risk Factor = Lower] [Time Horizon = Operations Planning]*
- R3.** Each applicable Transmission Operator directing BES operations through other entities shall include ~~those operations~~provisions for the loss of such entity's control functionality in its Operating Plan for backup functionality. *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- ~~**R4.**Each Reliability Coordinator shall have a backup control center facility that replicates the functionality of its primary control center facility as required for maintaining compliance with all reliability standards applicable to the Each Reliability Coordinator. This shall, during the time period when the primary control center functionality and the backup functionality can be are both available for use, have a backup control center facility (provided through its own dedicated backup facility or at another entity's control center) that provides the functionality required for maintaining compliance with all Reliability Standards applicable to the Reliability Coordinator. Coordinator's primary control center. [Violation Risk Factor = Medium] [Time Horizon = Operations Planning]~~
- R4.**
- ~~**R4.**~~**R5.** Each Balancing Authority and applicable Transmission Operator shall, during the time period when the primary control center functionality and the backup functionality

are both available for use, have backup ~~functionality~~ 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~~ Reliability Standards applicable to a Balancing Authority and Transmission Operator respectively. ~~This backup functionality can be provided either through a backup control center facility or contracted services.~~ [Violation Risk Factor = Medium] [Time Horizon = Operations Planning]

~~R6.~~ For Reliability Coordinators, the transition period between the loss of primary control center functionality and the time to fully implement the backup plan and get backup functionality up and running shall be planned to be less than two hours.

~~R7.~~ For each Balancing Authority and applicable Transmission Operator, the transition period between the loss of primary control center functionality and the time to fully implement the backup plan and get backup functionality up and running shall be planned to be less than six hours.

~~R5.R6.~~ For each Each Reliability Coordinator, Balancing Authority, and applicable Transmission Operator, ~~the shall annually review and approve its~~ Operating Plan for backup functionality ~~shall include a list of all entities that need to be notified of a change in operating locations.~~ [Violation Risk Factor = Lower] [Time Horizon = Operations Planning]

~~R8.1.~~ For each applicable Transmission Operator, if the transition period between the loss of primary control center functionality and the time to fully implement the backup plan and get backup functionality up and running is planned to be greater than two hours, then the Operating Procedure shall additionally include processes that will ensure the situational awareness and control of facilities with defined Interconnection Reliability Operating Limits (IROLs) beyond the two hour time period.

~~R8.2.~~ For each Balancing Authority, if the transition period between the loss of primary control center functionality and the time to fully implement the backup plan and get backup functionality up and running is planned to be greater than two hours, then the Operating Procedure shall additionally include processes that will ensure the calculation and control of its ACE beyond the two hour time period.

~~R9.~~ For each Reliability Coordinator, Balancing Authority, and applicable Transmission Operator, ~~The update and approval of the~~ Operating Plan for backup functionality shall take place ~~be documented and shall be reviewed and approved annually by a manager.~~

~~R5.1.R6.1.~~ Operating Plans for backup functionality shall be updated and ~~approved~~ take place within sixty calendar days of any changes to the backup location, capabilities, or ~~communication protocols~~ contact information.

~~R6.R7.~~ Each Reliability Coordinator, Balancing Authority, and applicable Transmission Operator shall have backup capability that does not depend on the primary control center for any ~~aspect of its operation.~~ functionality required to maintain compliance with Reliability Standards. [Violation Risk Factor = Medium] [Time Horizon = Operations Planning]

- ~~R7.R8.~~ Each Reliability Coordinator, Balancing Authority, and applicable Transmission Operator shall ~~have backup capability that is capable of operating for conduct an indefinite period of time.~~—annual test of its Operating Plan that includes: *[Violation Risk Factor = Medium] [Time Horizon = Operations Planning]*
- R8.1.** A demonstration of the transition time between the primary control center and the initiation of backup functionality.
- R8.2.** Actual implementation or test operations of the backup functionality for a minimum of two continuous hours.
- R8.3.** Test results shall be documented and lessons learned noted and incorporated in subsequent revisions of the Operating Plan for backup functionality.
- ~~R12.~~—Each Reliability Coordinator, Balancing Authority, and applicable Transmission Operator shall ~~test its Operating Plan for backup functionality through actual implementation or test operations for~~that has experienced a ~~minimum of two hours annually.~~
- ~~R9.~~ ~~Each Reliability Coordinator, Balancing Authority, and applicable Transmission Operator~~ loss of ~~their~~its primary or backup capability and that anticipates that ~~a total~~the loss of -primary or backup capability will last for more than six calendar months, shall provide a plan to its Regional Entity 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 applicable Transmission Operator shall have a dated, current, in force Operating Plan for backup functionality in accordance with Requirement R1, in electronic or hardcopy format, with evidence of its last issue, describing the manner in which it ensures reliable operations of the BES in the event that its primary control center becomes inoperable.
- M2.** Each Reliability Coordinator, Balancing Authority, and applicable 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, with evidence of its last issue, located in its primary control center and at the location supporting backup functionality.
- M3.** Each applicable Transmission Operator directing BES operations through other entities shall provide evidence that it has included provisions for the loss of such entity’s control functionality in its dated, current, in force Operating Plan for backup functionality, with evidence of its last issue, for backup functionality in accordance with Requirement R3.
- M4.** Each Reliability Coordinator shall provide dated evidence 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) that provides the functionality required for maintaining compliance with all Reliability Standards applicable to the Reliability Coordinator in accordance with Requirement R4.
- M5.** Each Balancing Authority and applicable Transmission Operator shall provide dated evidence that it has demonstrated that it’s backup functionality (provided either through

The Measures and Compliance elements are all new and are shown without “track changes” to make them easier to read.

a backup control center facility or contracted services) includes monitoring, control, logging, and alarming sufficient for maintaining compliance with all Reliability Standards applicable to a Balancing Authority or Transmission Operator respectively in accordance with Requirement R5.

- M6.** Each Reliability Coordinator, Balancing Authority, and applicable Transmission Operator, shall have evidence that it's dated, current, in force Operating Plan for backup functionality, in electronic or hardcopy format, with evidence of its last issue, has been reviewed and approved annually and that it has been updated within sixty calendar days of any changes to the backup location, capabilities, or contact information in accordance with Requirement R6.
- M7.** Each Reliability Coordinator, Balancing Authority, and applicable Transmission Operator shall have dated evidence that its backup capability does not depend on the primary control center for any functionality required to maintain compliance with Reliability Standards in accordance with Requirement R7.
- M8.** Each Reliability Coordinator, Balancing Authority, and applicable Transmission Operator shall provide evidence such as dated records, that it has tested its dated, current, in force Operating Plan for backup functionality, with evidence of its last issue, and that test results and lessons learned from such testing are noted and incorporated in subsequent revisions of its Operating Plan for backup functionality in accordance with Requirement R8.
- M9.** Each Reliability Coordinator, Balancing Authority, and applicable 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 Regional Entity 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 applicable 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 applicable 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 applicable Transmission Operator shall retain a dated, current, in force copy of its Operating Plan for backup functionality, with evidence of its last issue, located in its primary control center and at the location supporting backup functionality, for the current year, in accordance with Measurement M2.
- Each applicable Transmission Operator directing BES operations through other entities shall retain its dated, current, in force Operating Plan for backup functionality, with evidence of its last issue, providing evidence that it has included provisions for the loss of such entity's control functionality 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) in accordance with requirement R4 that provides the functionality required for maintaining compliance with all Reliability Standards applicable to the Reliability Coordinator in accordance with Measurement M4.
- Each Balancing Authority and applicable 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 applicable to a Balancing Authority and Transmission Operator respectively in accordance with Measurement M5.
- Each Reliability Coordinator, Balancing Authority, and applicable Transmission Operator, shall retain evidence for the current year and three previous years, that its dated, current, in force Operating Plan for backup functionality, with evidence of its last issue, has been reviewed and approved annually and that it has been updated within sixty calendar days of any changes to the backup location, capabilities, or contact information in accordance with Measurement M6.
- Each Reliability Coordinator, Balancing Authority, and applicable 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 backup capability does not depend on the primary control center

for any functionality required to maintain compliance with Reliability Standards in accordance with Measurement M7.

- Each Reliability Coordinator, Balancing Authority, and applicable Transmission Operator shall retain evidence for the current year and one previous year, such as dated records, that it has tested its dated, current, in force Operating Plan for backup functionality, with evidence of its last issue, in accordance with Measurement M8.
- Each Reliability Coordinator, Balancing Authority, and applicable 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 Regional Entity 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 applicable Transmission Operator has an Operating Plan for backup functionality but the plan is missing one of the sub-requirements or the plan is not dated with evidence of its last issue.	The Reliability Coordinator, Balancing Authority, or applicable Transmission Operator has an Operating Plan for backup functionality but the plan is missing two of the sub-requirements.	The Reliability Coordinator, Balancing Authority, or applicable Transmission Operator has an Operating Plan for backup functionality but the plan is missing three or more of the sub-requirements.	The Reliability Coordinator, Balancing Authority, or applicable Transmission Operator does not have an Operating Plan for backup functionality.
R2.	The Reliability Coordinator, Balancing Authority, or applicable Transmission Operator has an Operating Plan for backup functionality but the plan is not located in one of its control locations.	The Reliability Coordinator, Balancing Authority, or applicable Transmission Operator has an Operating Plan for backup functionality but the plan is not located in either of its control locations.	N/A	N/A
R3.	The applicable Transmission Operator directing BES operations through other entities has not included provisions for the loss of such entity's control functionality for 10% or less of its applicable entities in its Operating Plan for backup functionality.	The applicable Transmission Operator directing BES operations through other entities has not included provisions for the loss of such entity's control functionality for more than 10% and less than 25% of its applicable entities in its Operating Plan for backup functionality.	The applicable Transmission Operator directing BES operations through other entities has not included provisions for the loss of such entity's control functionality for more than 25% of its applicable entities in its Operating Plan for backup functionality.	The applicable Transmission Operator directing BES operations through other entities has not included provisions for 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	The Reliability Coordinator has demonstrated that it has	The Reliability Coordinator has demonstrated that it has	The Reliability Coordinator has not demonstrated that it has a

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R#	Lower	Moderate	High	Severe
	<p>backup control center facility (provided through its own dedicated backup facility or at another entity’s control center) in accordance with requirement R4 but it only provides the functionality required for maintaining compliance with 90% of the Reliability Standards applicable to the Reliability Coordinator or the evidence of the demonstration is not dated.</p>	<p>a backup control center facility (provided through its own dedicated backup facility or at another entity’s control center) in accordance with requirement R4 but it only provides the functionality required for maintaining compliance with 80% of the Reliability Standards applicable to the Reliability Coordinator.</p>	<p>a backup control center facility (provided through its own dedicated backup facility or at another entity’s control center) in accordance with requirement R4 but it only provides the functionality required for maintaining compliance with 70% of the Reliability Standards applicable to the Reliability Coordinator.</p>	<p>backup control center facility (provided through its own dedicated backup facility or at another entity’s control center) in accordance with requirement R4.</p>
R5.	<p>The Balancing Authority or applicable 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 only includes monitoring, control, logging, and alarming sufficient for maintaining compliance with 90% of the Reliability Standards applicable to a Balancing Authority and Transmission Operator respectively or its</p>	<p>The Balancing Authority or applicable 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 only includes monitoring, control, logging, and alarming sufficient for maintaining compliance with 80% of the Reliability Standards applicable to a Balancing Authority and</p>	<p>The Balancing Authority or applicable 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 only includes monitoring, control, logging, and alarming sufficient for maintaining compliance with 70% of the Reliability Standards applicable to a Balancing Authority and</p>	<p>The Balancing Authority or applicable 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.</p>

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R#	Lower	Moderate	High	Severe
	evidence is not dated.	Transmission Operator respectively.	Transmission Operator respectively.	
R6.	The Reliability Coordinator, Balancing Authority, or applicable Transmission Operator, has evidence that it's dated, current, in force Operating Plan for backup functionality, with evidence of its last issue, was reviewed and approved but it was done in more than twelve calendar months and less than or equal to fifteen calendar months or that it was updated more than sixty calendar days and less than or equal to ninety calendar days after any changes to the backup location, capabilities, or contact information.	The Reliability Coordinator, Balancing Authority, or applicable Transmission Operator, has evidence that it's dated, current, in force Operating Plan for backup functionality, with evidence of its last issue, was reviewed and approved but it was done in more than fifteen calendar months or that it was updated more than ninety calendar days after any changes to the backup location, capabilities, or contact information.	N/A	N/A
R7.	N/A	N/A	N/A	The Reliability Coordinator, Balancing Authority, or applicable Transmission Operator's dated evidence shows that its backup capability does depend on the primary control center for the functionality required to maintain compliance with

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R#	Lower	Moderate	High	Severe
				Reliability Standards.
R8.	The Reliability Coordinator, Balancing Authority, or applicable Transmission Operator has provided evidence, such as dated records, that it has tested its dated, current, in force Operating Plan for backup functionality, with evidence of its last issue, through actual implementation or test operations for less than two continuous hours, or it has failed to demonstrate that the transition time period is less than or equal to two hours, or it was done in more than twelve calendar months or test results and lessons learned were not incorporated in subsequent revisions of the Operating Plan for backup functionality. .	N/A	N/A	The Reliability Coordinator, Balancing Authority, or applicable Transmission Operator has not annually tested its dated, current, in force Operating Plan for backup functionality.
R9.	The Reliability Coordinator, Balancing Authority, or applicable Transmission Operator that has experienced a loss of their primary or backup capability and that	N/A	N/A	The Reliability Coordinator, Balancing Authority, or applicable Transmission Operator that has experienced a loss of their primary or backup capability and that anticipates

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R#	Lower	Moderate	High	Severe
	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 Regional Entity showing how it will re-establish backup capability but it was submitted in more than six calendar months.			that the loss of primary or backup capability would last for more than six calendar months, has not submitted a plan to its Regional Entity showing how it will re-establish backup.

E. Regional Variances

None.

Version History

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