

### **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. SAR version 1 posted on November 6, 2006.
2. SAR version 1 comment period closed on December 5, 2006.
3. SAR version 2 and comment responses for SAR version 1 posted on February 8, 2007.
4. SAR version 2 comment period closed on March 9, 2007.
5. SAR version 3 and comment responses for SAR version 2 accepted by SC and SDT appointed on April 9, 2007.
6. First posting of revised standards on August 15, 2007 with comment period closed on September 28, 2007.

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

The SDT began meeting in mid-April 2007 immediately following the approval of the SAR by the SC with the goal of completing work in approximately one year's time. The current draft is the first posting of the proposed standards. Only the requirements, violation risk factors, time horizons, and measures have been completed at this time. All compliance elements will be completed after the requirements have been reviewed. Requirements in EOP-007 and EOP-009 have been incorporated into the revised EOP-005 and EOP-006. Therefore, EOP-007 and EOP-009 will be retired when this project is approved and EOP-005-2 and EOP-006-2 go into effect.

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

<b>Anticipated Actions</b>	<b>Anticipated Date</b>
1. Third posting of draft standards.	March 2008
2. Standards posted for first ballot.	April 2008
3. Standards posted for second ballot.	May 2008
4. Standards sent to BOT for approval.	June 2008

**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.*

**None.**

**A. Introduction**

- 1. Title:** System Restoration from Blackstart Resources – Coordination
- 2. Number:** EOP-006-2
- 3. Purpose:** Ensure plans, and Facilities are established and personnel are in place to enable effective coordination of the System restoration from Blackstart Resources process to ensure reliability is maintained during restoration and priority is placed on restoring the Interconnection.
- 4. Applicability:**
  - 4.1.** Reliability Coordinators.
- 5. Proposed Effective Date:** TBD

**B. Requirements**

- R1.** Each Reliability Coordinator shall have a Reliability Coordinator Area restoration plan. The restoration plan shall be written such that it allows for the restoration of its area following a Disturbance in which one or more areas of the Bulk Electric System (BES) shuts down and the use of Blackstart Resources is required to restore the shut down area to service, to a state whereby the choice of the next Load to be restored is not driven by the need to control frequency or voltage for an event that requires the utilization of Blackstart Resources regardless of whether the Blackstart Resource is located within the Reliability Coordinator’s Area. The restoration plan shall include: [Violation Risk Factor = High] [Time Horizon = Operations Planning]
  - R1.1.** Procedures for restoring the integrity of the Interconnection.
  - R1.2.** Descriptions of the elements of coordination between individual Transmission Operator restoration plans.
  - R1.3.** Descriptions of the elements of coordination of restoration plans with neighboring Reliability Coordinators.
  - R1.4.** Criteria and conditions for reestablishing interconnections between neighboring Transmission Operators and Reliability Coordinator Areas.
  - R1.5.** Identification of acceptable voltage and frequency limits during restoration.
  - R1.6.** A statement accounting for the possibility that restoration can not be completed as expected indicating that in situations where the actual conditions do not match the studied conditions, the System Operator shall use professional judgment to deviate from the System restoration plan.
  - R1.7.** Reporting requirements for the entities within the Reliability Coordinator Area during a restoration event.
- R2.** The Reliability Coordinator, to ensure the reliability of the Interconnection, shall distribute its Reliability Coordinator Area restoration plan to its Transmission Operators, Balancing Authorities, and neighboring Reliability Coordinators. [Violation Risk Factor = Lower] [Time Horizon = Operations Planning]

- R3.** Each Reliability Coordinator shall review its restoration plan on an annual (rolling 365 days) basis. [Violation Risk Factor = Medium] [Time Horizon = Operations Planning]
- R4.** Each Reliability Coordinator shall update its restoration plan within ninety calendar days after identifying changes to one of its Transmission Operator's restoration plans or upon reviewing a neighboring Reliability Coordinator's restoration plan that would necessitate a change in their coordination tasks or responsibilities. [Violation Risk Factor = Medium] [Time Horizon = Operations Planning]
- R5.** Each Reliability Coordinator shall review the Transmission Operator restoration plans within its Reliability Coordinator Area. [Violation Risk Factor = Medium] [Time Horizon = Operations Planning]
- R5.1.** The Reliability Coordinator shall determine whether the Transmission Operator's restoration plan is coordinated with the Reliability Coordinator's restoration plan as well as being compatible with other Transmission Operator restoration plans within its Reliability Coordinator Area.
- R5.2.** The Reliability Coordinator shall approve or disapprove the Transmission Operator's submitted restoration plan within thirty calendar days following the receipt of the restoration plan from the Transmission Operator.
- R5.3.** The Reliability Coordinator shall provide written notification to the Transmission Operator of its decision and provide reasons if disapproving a Transmission Operator's restoration plan.
- R6.** Each Reliability Coordinator shall have a copy of the latest approved restoration plan of each Transmission Operator in its Reliability Coordinator Area within each of its control centers and available to all of its control room personnel. [Violation Risk Factor = Lower] [Time Horizon = Operations Planning]
- R7.** Following a Disturbance in which one or more areas of the BES shuts down and the use of Blackstart Resources is required to restore the shut down area to service, each Reliability Coordinator shall work in conjunction with affected Balancing Authorities, Generator Operators, and Transmission Operators as well as neighboring Reliability Coordinators to monitor restoration progress, coordinate restoration, and take actions to restore the BES frequency within acceptable operating limits. Such actions may include but not be limited to adjusting generation, placing additional generators on line, or shedding Load. [Violation Risk Factor = High] [Time Horizon = Real-time Operations]
- R8.** Following a Disturbance in which one or more areas of the BES shuts down and the use of Blackstart Resources is required to restore the shut down area to service, the Reliability Coordinator shall authorize and coordinate resynchronizing isolated areas that bridge boundaries between Transmission Operators or Reliability Coordinators. [Violation Risk Factor = High] [Time Horizon = Real-time Operations]
- R9.** Following a Disturbance in which one or more areas of the BES shuts down and the use of Blackstart Resources is required to restore the shut down area to service, the Reliability Coordinator shall serve as the primary contact for disseminating information regarding restoration to neighboring Reliability Coordinators, and to

Transmission Operators, and Balancing Authorities within its Reliability Coordinator Area. [Violation Risk Factor = Lower] [Time Horizon = Real-time Operations]

**R10.** Each Reliability Coordinator shall include within its operations training program, annual System restoration training for the control room personnel identified in its restoration plan to ensure the proper execution of its restoration plan. This training program shall include the following: [Violation Risk Factor = Medium] [Time Horizon = Operations Planning]

**R10.1.** System restoration philosophy including the coordination role of the Reliability Coordinator.

**R10.2.** Reestablishing the Interconnection.

**R11.** Each Reliability Coordinator shall conduct two System restoration drills, exercises, or simulations per calendar year, which shall include the Transmission Operators and Generator Operators as dictated by the particular scope of the drill, exercise, or simulation that is being conducted. [Violation Risk Factor = Medium] [Time Horizon = Operations Planning]

**R11.1.** Each Reliability Coordinator shall request each Transmission Operator and Generator Operator identified in its restoration plan to participate in a drill, exercise, or simulation at least every two calendar years.

### **C. Measures**

**M1.** Each Reliability Coordinator shall have available a copy of its restoration plan in accordance with Requirement R1.

**M2.** Each Reliability Coordinator shall provide evidence such as e-mails with receipts or registered mail receipts, that its restoration plan has been distributed in accordance with Requirement R2.

**M3.** Each Reliability Coordinator shall provide evidence such as a review signature sheet, or revision histories, that it has reviewed its restoration plan in accordance with Requirement R3.

**M4.** Each Reliability Coordinator shall provide evidence such as a review signature sheet, or revision histories, that it has updated its restoration plan in accordance with Requirement R4.

**M5.** Each Reliability Coordinator shall provide evidence such as a review signature sheet, that it has reviewed its Transmission Operator's submitted restoration plan(s) in accordance with Requirement R5.

**M6.** Each Reliability Coordinator shall have documentation such as e-mail receipts that it has made the latest approved copy of its restoration plan available in each of its control rooms and to each of its control room personnel in accordance with Requirement R6.

**M7.** If there has been a Disturbance in which Blackstart Resources have been utilized, each Reliability Coordinator involved shall have evidence such as voice recordings, e-mail, or operator logs, that it monitored and coordinated restoration progress in accordance with Requirement R7.

- M8.** If there has been a resynchronizing of an isolated area, each Reliability Coordinator involved shall have evidence such as voice recordings, e-mail, or operator logs, that it authorized resynchronizing in accordance with Requirement R8.
- M9.** If there has been a Disturbance in which Blackstart Resources have been utilized, each Reliability Coordinator involved shall have evidence such as voice recordings, e-mail, or operator logs, that it served as the primary contact to disseminate information to neighboring Reliability Coordinators and Transmission Operators and Balancing Authorities within its Reliability Coordinator Area in accordance with Requirement R9.
- M10.** Each Reliability Coordinator shall have a copy of its training records available showing that it has provided training in accordance with Requirement R10.
- M11.** Each Reliability Coordinator shall have evidence such as training records that it conducted two System restoration drills, exercises, or simulations per year that included Transmission Operators and Generator Operators with Blackstart Resources in accordance with Requirement R11.