

Alberta Reliability Standard

System Restoration Coordination

EOP-006-AB-2

1. Purpose

Ensure plans are established and personnel are prepared to enable effective coordination of the system restoration process to ensure **reliability** is maintained during restoration of the **interconnected electric system** in the event of a complete or partial **blackout**.

2. Applicability

This **reliability standard** applies to:

- (a) the **ISO**.

3. Requirements

R.1. The **ISO** must have a restoration plan for its area. The scope of the **ISO's** restoration plan starts when contracted **blackstart resources** are utilized to re-energize a shut down area of the **bulk electric system**. The scope of the **ISO's** restoration plan ends when each **operator** of a **transmission facility** is interconnected and the **ISO's** area is connected to all of its neighbouring **reliability coordinator areas**, provided facilities are available to be returned to service. The restoration plan shall include:

- R1.1.** a strategy to be employed during restoration events for restoring the **interconnected electric system** including minimum criteria for meeting the objectives of the **ISO's** restoration plan;
- R1.2.** operating processes for restoring the **interconnected electric system**;
- R1.3.** the elements of coordination between the **ISO** and each **operator** of a **transmission facility** in accordance with the **ISO's** system restoration plan;
- R1.4.** descriptions of the elements of coordination of restoration plans with neighbouring **reliability coordinators**;
- R1.5.** criteria and conditions for reestablishing connections between each **operator** of a **transmission facility** within its area, with **transmission operators** in other **reliability coordinator areas**, and with other **reliability coordinators**;
- R1.6.** reporting requirements for the entities within the **ISO's** area during a restoration event;
- R1.7.** criteria for sharing information regarding restoration with neighbouring **reliability coordinators** and with **operators** of **transmission facilities** within the **ISO's** area; and
- R1.8.** identification of the **ISO** as the primary contact for disseminating information regarding restoration to neighbouring **reliability coordinators**, and to **operators** of **transmission facilities** within its area.
- R1.9.** Intentionally left blank.

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- R2.** The **ISO** must distribute its most recent restoration plan to each **operator** of a **transmission facility**, as referenced in the **ISO**'s restoration plan, and to neighbouring **reliability coordinators** within thirty (30) **days** of creation or revision.
- R3.** The **ISO** must review its restoration plan within thirteen (13) **months** of the last review.
- R4.** The **ISO** must review its neighbouring **reliability coordinator**'s restoration plans.
 - R4.1.** If the **ISO** finds conflicts between its restoration plans and any of its neighbours, the conflicts must be resolved in thirty (30) **days**.
- R5.** The **ISO** must review the restoration plans or procedures of **operators** of **transmission facilities** within its area that are required to be submitted to the **ISO** under any **ISO rules** or **reliability standards**.
 - R5.1.** The **ISO** must determine whether each of the restoration plans or procedures referenced in requirement R5 is coordinated and compatible with the **ISO**'s restoration plan and each of the other restoration plans or procedures referenced in requirement R5. The **ISO** must approve or disapprove, with stated reasons, the restoration plan or procedure submitted by an **operator** of a **transmission facility** within thirty (30) **days** following the receipt of the restoration plan or procedure.
- R6.** The **ISO** must have, within its primary and backup control rooms, so that it is available to all of its operating personnel, a copy of its latest restoration plan and copies of the latest restoration plans or procedures of each **operator** of a **transmission facility** in the **ISO**'s area that is required to have an approved plan or procedure in accordance with any **ISO rule** or **reliability standard**.
- R7.** The **ISO** must work with each affected **operator** of a **generating unit**, **operator** of an **aggregated generating facility**, and **operator** of a **transmission facility** as well as neighbouring **reliability coordinators** to monitor restoration progress, coordinate restoration, and take actions to restore the **bulk electric system** frequency within acceptable operating limits. If the restoration plan cannot be completed as expected, the **ISO** must utilize its restoration plan strategies to facilitate restoration of the **interconnected electric system**.
- R8.** The **ISO** must coordinate or authorize resynchronizing islanded areas that bridge boundaries between each **operator** of a **transmission facility** or a boundary between the **ISO**'s area and a **reliability coordinator area**. If the resynchronization cannot be completed as expected the **ISO** must utilize its restoration plan strategies to facilitate resynchronization.
- R9.** The **ISO** must include within its operations training program, annual **interconnected electric system** restoration training for its operating personnel to assure the proper execution of its restoration plan. This training program must address the following
 - R9.1.** the coordination role of the **ISO**; and
 - R9.2.** reestablishing **WECC** Paths 1 and 83.
- R10.** The **ISO** must conduct two (2) scheduled instances of a system restoration drill, exercise, or simulation per calendar year, which must provide an opportunity for each **operator** of a **transmission facility**, **operator** of a **generating unit** and **operator** of an **aggregated generating**

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facility to attend as dictated by the particular scope of the drill, exercise, or simulation that is being conducted.

R10.1. The **ISO** must request each **operator** of a **transmission facility**, **operator** of a **generating unit** and **operator** of an **aggregated generating facility**, as identified in the **ISO's** restoration plan, to participate in a drill, exercise, or simulation at least once every two calendar years

4. Measures

The following measures correspond to the requirements identified in section 3 of this **reliability standard**. For example, MR1 is the measure for requirement R1.

- MR1** Evidence of having a restoration plan as required in requirement R1 exists. Evidence may include, but is not limited to, a dated copy of the restoration plan.
- MR2** Evidence of distributing the restoration plan as required in requirement R2 exists. Evidence may include, but is not limited to, e-mails with receipts or other equivalent evidence.
- MR3.** Evidence of reviewing the restoration plan as required in requirement R3 exists. Evidence may include, but is not limited to, a review signature sheet, or revision histories, or other equivalent evidence.
- MR4.** Evidence of reviewing neighboring **reliability coordinator's** restoration plans and resolving any conflicts within thirty (30) **days** as required in requirement R4 exists.
- MR5.** Evidence of reviewing, approving or disapproving, and notifying each **operator** of a **transmission facility** as required in requirement R5 exists. Evidence may include, but is not limited to, a review signature sheet or emails, or other equivalent evidence.
- MR6.** Evidence of having copies of restoration plans as required in requirement R6 exists. Evidence may include, but is not limited to, e-mails, restoration plans or procedures documentation, or other equivalent evidence.
- MR7.** Evidence of monitoring and coordinating restoration progress as required in requirement R7 exists. Evidence may include, but is not limited to, voice recordings, e-mail, dated computer printouts, **operator** logs or other equivalent evidence.
- MR8.** If there has been a resynchronizing of an islanded area, the **ISO** and each **reliability coordinator** involved may have evidence that it coordinated or authorized resynchronizing in accordance with requirement R8. Evidence may include, but is not limited to, voice recordings, e-mails, **operator** logs or other equivalent evidence.
- MR9.** The **ISO** may have an electronic or hard copy of its training records available showing that it has provided training in accordance with requirement R9.
- MR10.** The **ISO** may have evidence that it conducted two scheduled instances of a system restoration drill, exercise, or simulation per calendar year and that **operators** of a **transmission facility** and **operators** of a **generating unit** and **operators** of an **aggregated generating facility** as identified in the **ISO's** restoration plan were invited in accordance with requirement R10. Evidence may include, but is not limited to, e-mails or other equivalent evidence.

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Revision History

Effective Date	Description
2015-09-01	Initial release.