

Alberta Reliability Standard

Contingency Reserve

BAL-002-WECC-AB1-2



1. Purpose

The purpose of this **reliability standard** is to specify the quantity and types of **contingency reserve** required to ensure reliability under normal and abnormal conditions.

2. Applicability

This **reliability standard** applies to:

- (a) the **ISO**, which may meet the requirements of this reliability standard through participation in a **reserve sharing group** that the **ISO** has designated as its agent.

This **reliability standard** does not apply in the case of contingencies that result in the **interconnected electric system** losing synchronism with the **western interconnection**.

3. Requirements

R1 The **ISO** must have held, at a minimum, an average amount of **contingency reserve** that is:

R1.1 the greater of either:

- (a) an amount equal to the loss of the most severe single **contingency**; or
- (b) an amount equal to the sum of:

three percent (3%) of the hourly integrated amount of load, being the hourly integrated amount of net generation the **ISO** determines is delivered to the grid minus **net actual interchange**;

plus

three percent (3%) of the hourly integrated amount of net generation the **ISO** determines is delivered to the grid;

where “net generation the **ISO** determines is delivered to the grid” is equal to the sum of:

- (i) generation from a **generating unit** or **aggregated generating facility** but not including unit service and station service loads;
plus
- (ii) generation from an industrial complex or facility that has on-site generation but not including generation serving on-site load;
plus
- (iii) generation delivered to the grid by the City of Medicine Hat;

R1.2 comprised of any combination of the **operating reserve** types specified below:

- (a) **spinning reserve**;
- (b) **supplemental reserve**;

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- (c) **interchange transactions** sourced within Alberta that the **ISO** designates as **supplemental reserve**;
- (d) **interchange transactions** sourced external to Alberta that the **ISO** designates as **spinning reserve** or **supplemental reserve** and that, by agreement, is deliverable to Alberta on firm transmission service;
- (e) a resource, other than a **generating unit**, an **aggregated generating facility** or load, that can provide energy or reduce energy consumption;
- (f) load, including demand response resources, demand-side management resources, direct control load management, interruptible load or **interruptible demand**, or any other load made available for curtailment by the **ISO** via contract or agreement; and
- (g) during capacity and energy emergencies, load that can be interrupted; and

R1.3 an amount of capacity from a resource that is capable of fully responding within ten (10) minutes;

except within the first sixty (60) minutes following a **disturbance** resulting from a loss of supply and requiring the activation of **contingency reserve** or except following the deployment of **contingency reserve** during implementation of the **ISO**'s capacity and energy emergency plan.

R2 The **ISO** must maintain at least fifty percent (50%) of its minimum amount of **contingency reserve** required in requirement R1 as **spinning reserve** that is immediately and automatically responsive to frequency deviations through the action of a **governor** or other control system.

R3 The **ISO** must, when operating as a sink **balancing authority**, maintain an amount of **operating reserve**, in addition to the minimum **contingency reserve** required in requirement R1, equal to the amount of **supplemental reserve** for any **interchange transaction** designated as part of the **supplemental reserve** of the source **balancing authority** or source **reserve sharing group**, except within the first sixty (60) minutes following an event requiring the activation of **contingency reserve** or except following the deployment of **contingency reserve** during implementation of the **ISO**'s capacity and energy emergency plan.

R4 The **ISO** must, when operating as a source **balancing authority**, maintain an amount of **operating reserve**, in addition to the minimum **contingency reserve** amounts required in requirement R1, equal to the amount and type of **operating reserve** for any **operating reserve** transactions for which it is the source **balancing authority**.

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 held **contingency reserve** as required in requirement R1 exists. Evidence may include:

- (a) a **reserve sharing group** agreement including an agent appointment agreement, documentation of the methodology of the **contingency reserve** calculation, or **ancillary services** contracts; or

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(b) records of **disturbances** or implementation of the **ISO's** capacity and emergency plan as required in requirement R1.

MR1.1 Evidence of calculating the amount of **contingency reserve** as required in requirement R1.1 exists. Evidence may include records of the required and available **contingency reserve**.

MR1.2 Evidence of having **contingency reserve** that is comprised of the **operating reserve** types as required in requirement R1.2 exists. Evidence may include a **reserve sharing group** agreement including an agent appointment agreement or **ancillary services** contracts.

MR1.3 Evidence of having access to **contingency reserve** that is capable of fully responding in ten (10) minutes as required in requirement R1.3 exists. Evidence may include a **reserve sharing group** agreement including an agent appointment agreement or technical requirements for **contingency reserve**.

MR2 Evidence of maintaining at least fifty percent (50%) of the ISO's minimum amount of **contingency reserve** as **spinning reserve** that is immediately responsive to frequency deviations as required in requirement R2 exists. Evidence may include a **reserve sharing group** agreement including an agent appointment agreement or records of **dispatches** of **ancillary services**.

MR3 Evidence of maintaining an amount of **operating reserve** as required in requirement R3 exists. Evidence may include a sworn affidavit from an appropriate **ISO** representative, authoritative documents that restrict or permit the transactions set out in requirement R3, documents that demonstrate the **ISO** was in a capacity and energy emergency, or a **reserve sharing group** agreement including an agent appointment agreement.

MR4 Evidence of maintaining an amount of **operating reserve** as required in requirement R4 exists. Evidence may include a sworn affidavit from an appropriate **ISO** representative or a **reserve sharing group** agreement including an agent appointment agreement.

Revision History

Effective Date	Description
2015-07-26	Revised Applicability section to include exclusion for contingencies that result in the interconnected electric system losing synchronism with the western interconnection
2014-10-01	Initial release.