ISO Rules
Part 200 Markets
Division 205 Ancillary Services
Section 205.5 Spinning Reserve Technical Requirements and Performance Standards

Applicability

1 Section 205.5 applies to:

(a) a **pool participant**; and

(b) the **ISO**.

Requirements

Application for Qualification to Provide Spinning Reserve

2(1) A **pool asset** must be qualified by the **ISO** in order to provide **spinning reserve**.

(2) A **pool participant** seeking to have the **ISO** qualify a **pool asset** to provide **spinning reserve** must provide the **ISO** with:

(a) a completed application form, available on the AESO website; and

(b) the data and records that the **ISO** specifies in the application form.

Eligibility to Provide Spinning Reserve

3(1) A **pool participant** seeking to have the **ISO** qualify its **pool asset** qualified to provide **spinning reserve** must ensure that its **pool asset** has at least one **spinning reserve resource** that is:

(a) at a minimum, capable of providing:

(i) 10 MW of **spinning reserve**; and

(ii) the amount of **real power** applied for under subsection 2(2) for a period of 1 hour.

(b) equipped with a **governor** or **governor system** that:

(i) is responsive to both over frequency and under frequency events;

(ii) has a total deadband of less than or equal to 0.036 Hz;

(iii) has a droop setting greater than or equal to 3% but less than or equal to 5% based on the maximum operating range of the **spinning reserve resource**, as specified by the **ISO**;

(iv) has no time delays, ramp characteristics or other control settings that prevent the **spinning reserve resource** from providing an immediate, automatic and sustained response to frequency deviations;

(v) has a sample rate of at least 20 samples per second;

(vi) has a resolution of at least 0.004 Hz; and

(vii) is not acting as a **governor** or **governor system** for more than one **spinning reserve resource**.

(2) The requirements set out in subsections 3(1)(b)(v) and (vi) do not apply to a **pool asset** that provides **spinning reserve** from a **generating unit** that is equipped with an analog **governor**, as of December 23, 2014, until such time as the **governor** is replaced.

Qualification of a Pool Asset to Provide Spinning Reserve

4(1) The **ISO** may qualify a **pool asset** to provide **spinning reserve** if one or more **spinning reserve resources** of the **pool asset** meet the eligibility criteria set out in subsection 3.

(2) The **ISO** must, after qualifying a **pool asset** under subsection 4(1), determine the **real power** quantity in MW that each **spinning reserve resource** of the **pool asset** is capable of providing, with consideration given to the following:

(a) whether the **spinning reserve resource** participates in a **remedial action scheme**;

(b) the total **operating reserve** that could be lost during a single **contingency**;

(c) the maximum **real power** capability and minimum **real power** capability of each **spinning reserve resource** of the **pool asset**; and

(d) any other factors that the **ISO** considers relevant.

(3) The **ISO** must advise a **pool participant** whether its **pool asset** is qualified to provide **spinning reserve** within 60 **days** of the **ISO** receiving a completed application under subsection 2(2).

Performance Requirements when under Dispatch to Provide Spinning Reserve

5(1) A **pool participant** must ensure that, following the receipt of a **dispatch** to provide **spinning reserve**, one or more **spinning reserve resources** of the **pool asset** are positioned to provide the **real power** set out in the **dispatch** within a total tolerance of minus:

(a) 1 MW for a **dispatch** of less than or equal to 20 MW; or

(b) 5% of the **dispatch** quantity for a **dispatch** greater than 20 MW.

(2) A **pool participant** must ensure that each **spinning reserve resource** being used to provide **spinning reserve** meets the requirements set out in subsection 5(1) beginning at:

(a) the time stated in the **dispatch** for a **dispatch** with a time more than 15 minutes from the time the **pool participant** receives the **dispatch**; or

(b) the time stated in the **dispatch**, or as soon as possible thereafter but not more than 15 minutes after receiving the **dispatch**, for a **dispatch** with a time 15 minutes or less from the time the **pool participant** receives the **dispatch**.

(3) A **pool participant** will not be paid for **spinning reserve** unless the **pool participant** ensures that the **spinning reserve resources** being used to provide **spinning reserve** meet the requirements set out in subsections 5(1) and 5(2).

Frequency Response Requirements when under Dispatch to Provide Spinning Reserve

6(1) A **pool participant** must ensure that, while its **pool asset** is under a **dispatch** to provide **spinning reserve**, the **governor** or **governor system** of each **spinning reserve resource** providing **spinning reserve** is operating such that it is:

(a) in service at all times; and

(b) operating without load limiters or other control systems including outer control loops that would prevent the **governor** or **governor system** from achieving the maximum frequency response.

(2) A **pool participant** must ensure that, while its **pool asset** is under a **dispatch** to provide **spinning reserve**, the change in **real power** of each **spinning reserve resource** being used to provide **spinning reserve** is:

(a) continuously proportional to the measured frequency;

(b) in accordance with the droop setting set out in subsection 3(1)(b)(iii); and

(c) limited to the maximum **real power** capability of the **spinning reserve resource** that is available at the time of the frequency event

for any change in frequency where the frequency goes outside the deadband set out in subsection 3(1)(b)(ii).

(3) A **pool participant** must ensure that, while its **pool asset** is under a **dispatch** to provide **spinning reserve**, each **spinning reserve resource** being used to provide **spinning reserve** sustains the change in **real power** set out in subsection 6(2) for any change in frequency where the frequency is outside the deadband set out in subsection 3(1)(b)(ii).

(4) A **pool participant** must ensure that, while its **pool asset** is under a **dispatch** to provide **spinning reserve**, for any change in frequency where the frequency is outside the deadband set out in subsection 3(1)(b)(ii), other resources within the **pool asset** do not change their **real power** load level as a result of the change in **real power** of the **spinning reserve resource**, unless such a change does not negatively impact frequency response of the **pool asset**.

(5) A **pool participant** must ensure that, for the applicable minimum time period set out in Appendix 1, each **spinning reserve resource** being used to provide **spinning reserve** will not trip as a result of under frequency or over frequency deviations while the **pool asset** is under a **dispatch** to provide **spinning reserve**.

Maintaining Connection when under Dispatch to Provide Spinning Reserve

7 A **pool participant** must ensure that, while its **pool asset** is under a **dispatch** to provide **spinning reserve**, the **spinning reserve resource** remains connected to the **interconnected electric system** and remains frequency responsive in accordance with the requirements set out in subsection 6.

Measuring Frequency Response when under Dispatch to Provide Spinning Reserve

8 For the purpose of subsection 6, frequency response performance is measured at:

(a) the stator winding terminals of the **generating unit** or synchronous **energy storage resource**;

(b) the circuit breaker or disconnection device that is electrically closest to each load;

(c) the alternating current terminal closest to each inverter based resource;

(d) the **collector bus** for **aggregated facilities**; or

(e) a point the **ISO** designates.

Other Facility Arrangements

9 The **ISO** may, for the purposes of evaluating frequency response performance, consider other facility arrangements if the combined change in **real power** demonstrates in aggregate that they meet the technical requirements set out in subsection 6 for a single **spinning reserve resource**.

Performance Requirements when Responding to a Directive to Provide Spinning Reserve

10(1) A **pool participant** must, within 10 minutes following receipt of a **directive** to provide **spinning reserve**, ensure that its **pool asset** is providing a quantity of **real power** equal to the instantaneous amount of **real power** of the **pool asset** at the time of the **directive** and the amount of **real power** set out in the **directive**

(2) A **pool participant** must ensure that, from the first time its **pool asset** achieves the response set out in subsection 10(1) to the time 15 minutes following receipt of the **directive**, the **pool asset** is providing an average response equal to or greater than the amount of **real power** set out in the **directive**.

(3) A **pool participant** must ensure that, for each consecutive 10 minute interval beginning 15 minutes following receipt of a **directive**, the average response from the **pool asset** equals the amount of **real power** set out in the **directive**, within a tolerance of plus or minus:

(a) 5 MW for a **pool asset** with a **maximum capability** of 200 MW or less; or

(b) 10 MW for a **pool asset** with a **maximum capability** of greater than 200 MW.

(4) Where a **pool asset** does not have a **maximum capability**, the tolerances set out in subsection 10(3) will be measured against the maximum qualified facility capacity the **ISO** prescribes for the **pool asset**.

(5) A **pool participant** must ensure that its **pool asset** continues to meet the requirements set out in subsection 10(3) for as long as the **directive** to provide **spinning reserve** is in effect.

(6) A **pool participant** must ensure that its **pool asset** is in the position set out in subsection 5(1) as soon as possible but not more than 15 minutes after receiving cancellation of the **directive** for **spinning reserve**.

Measuring Response to a Directive

11 A **pool participant** must ensure that each **pool asset** complies with the requirements set out in subsection 10 as measured at:

(a) the stator winding terminals of each **generating unit** or synchronous **energy storage resource**;

(b) the circuit breaker or disconnection device that is electrically closest to each load;

(c) the alternating current terminal closest to each inverter based resource;

(d) the **collector bus** for **aggregated facilities**; or

(e) a point the **ISO** designates.

Test Requirements

12 The **ISO** may request a **pool participant** to test a **spinning reserve resource**:

(a) prior to allowing the **spinning reserve resource** to provide **spinning reserve**;

(b) if the **ISO** provides evidence that the **spinning reserve resource** exhibits behaviour that is inconsistent with the requirements of this Section 205.5; or

(c) if the **ISO** otherwise determines that such testing is necessary.

Maintaining Eligibility to Provide Spinning Reserve

13(1) The **ISO** may issue a notice suspending the ability of a **pool participant** to provide **spinning reserve** if the **pool participant** does not comply with:

(a) a testing request pursuant to subsection 12;

(b) any other provision of this Section 205.5; or

(c) other **ISO rules** that affect the provision of **spinning reserve**.

(2) A **pool participant** that has received a suspension notice issued pursuant to subsection 13(1) must not submit an **offer** for **spinning reserve** until the **ISO** confirms that the **pool participant** is compliant with this Section 205.5 and all other **ISO rules** that affect the provision of **spinning reserve**.

Appendices

Appendix 1 – *Frequency Ranges*

Revision History

Date	Description
2024-04-01	Amended, as approved in **Commission** Decision 28176-D01-2023 issued on June 13, 2023.
2018-02-01	Revised requirements to be technology agnostic, added new clarified requirements to define for proper frequency response.
2015-03-27	Replaced “effective date” within the initial release date in section 3(5); and replaced the word “Effective” in the Revision History to “Date”.
2014-12-23	Initial release

Appendix 1
Frequency Ranges

High Frequency Duration		Low Frequency Duration	
Frequency (Hz)	**Time (seconds)**	**Frequency (Hz)**	**Time (seconds)**
≥ 61.7	Instantaneous trip	≤57.0	Instantaneous trip
≥61.6	30	≤57.3	0.75
≥60.6	180	≤ 57.8	7.5
<60.6	Continuous operation	≤ 58.4	30
		≤ 59.4	180
		> 59.4	Continuous operation