Alberta Reliability Standard
Reliability Coordination – Current Day Operations
IRO-005-AB-3.1a

1. Purpose

The **ISO** must be continuously aware of conditions within its area and include this information in its reliability assessments. The **ISO** must monitor **bulk electric system** parameters that may have significant impacts upon its area and neighbouring **reliability coordinator areas**.

2. Applicability

This **reliability standard** applies to:

(a) the **ISO**.

3. Requirements

R1 The **ISO** must monitor parameters in its area, including but not limited to the following:

- **R1.1** current status of **system elements** that are part of the **bulk electric system** (transmission or generation including critical auxiliaries such as **automatic voltage regulators** and **remedial action schemes**) and system loading;
- **R1.2** current pre-contingency **system element** conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate **system operating limit** or **interconnection reliability operating limit** violations, including the plan's viability and scope;
- **R1.3** current post-contingency **system element** conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate **system operating limit** or **interconnection reliability operating limit** violations, including the plan's viability and scope;
- **R1.4** system **real power** and **reactive power** reserves (actual versus required);
- **R1.5** capacity and energy adequacy conditions;
- **R1.6** current **area control error**;
- **R1.7** current local or transmission loading relief procedures in effect;
- **R1.8** planned generation **dispatches**;
- **R1.9** planned transmission or generation outages; and
- **R1.10** **contingency** events.

R2 The **ISO** must monitor parameters in its area to ensure that the required amount of **operating reserves** is provided and available as required to meet the **control performance standard** and **disturbance control standard** requirements. If necessary, the **ISO** must arrange for assistance from neighboring **balancing authorities**. The **ISO** must issue energy emergency alerts as needed.

R3 The **ISO** must ensure that it is aware of geomagnetic disturbance forecast information and develop any required response plans.

R4 Intentionally left blank.

R5 The **ISO** must monitor system frequency and rebalance as necessary to return to **control performance standard** and **disturbance control standard** compliance. The **ISO** must utilize all resources, including issuing directives for firm load shedding, to relieve the emergent condition.

R6 The **ISO** must develop and implement action plans to mitigate anticipated or actual **system operating limit**, **control performance standard** or **disturbance control standard** violations. The **ISO** must coordinate pending transmission maintenance outages with any **operator** of a **transmission facility**, adjacent **transmission operator**, **adjacent balancing authority**, **operator** of a **generating unit** or **operator** of an **aggregated generating facility**, as needed, in both the **real-time** and next-day reliability analysis timeframes.

R7 As necessary, the **ISO** must arrange for assistance from neighboring **reliability coordinator areas** or **balancing authorities**.

R8 Intentionally left blank.

R9 Whenever a **remedial action scheme** that may have an inter-**balancing authority**, or inter-transmission operator / inter-**operator** of a **transmission facility** impact (e.g., could potentially affect transmission flows resulting in a **system operating limit** or **interconnection reliability operating limit** violation) is armed, the **ISO** must be aware of the impact of the operation of that **remedial action scheme** on inter-area flows.

R10 In instances where there is a difference in derived limits, the **ISO** must always operate the **bulk electric system** to the most limiting parameter.

R11 The **ISO** must respect **system operating limits** and **interconnection reliability operating limits** in accordance with regional **total transfer capability** and **available transfer capability** processes.

R12 Intentionally left blank.

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 The **ISO** may have evidence that could include, but is not limited to, energy management system description documents, computer printouts, a prepared report specifically detailing compliance to each of the bullets in requirement R1, EMS availability, SCADA data collection system communications performance or equivalent evidence that will be used to confirm that it monitors its area parameters specified in requirements R1.1 through R1.9.

MR2 The **ISO** must have evidence of monitoring parameters as required in requirement R2. Evidence may include but is not limited to: voice recordings, operator logs, data files or other equivalent evidence.

MR3 The **ISO** may have evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence to demonstrate that it was aware of geomagnetic disturbance (GMD) forecast information and evidence of the development of any required response plans.

MR4 Intentionally left blank.

MR5 The **ISO** may have evidence that could include, but is not limited to, computer printouts, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it monitored system frequency and rebalanced, as specified in requirement R5.

The **ISO** may have evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it utilized all resources, including issuing directives for firm load shedding, to relieve an emergent condition.

MR6 The **ISO** may have evidence that could include, but is not limited to, voice recordings or transcripts of voice recordings, electronic communications, operator logs or equivalent evidence that will be used to determine if it developed and implemented action plans to mitigate anticipated or actual **system operating limit**, **control performance standards** or **disturbance control standard** violations. The **ISO** may have evidence that could include, but is not limited to, electronic communications, operator logs or equivalent evidence that will determine if it coordinated pending transmission maintenance outages with an **operator** of a **transmission facility**, adjacent **transmission operator**, adjacent **balancing authorities**, **operator** of a **generating unit** or operator of an **aggregated generating facility**.

MR7 The **ISO** may have evidence that could include, but is not limited to, computer printouts, operating logs, voice recordings or transcripts of voice recordings, or equivalent evidence that will be used to determine if the **ISO** arranged for assistance from neighboring **reliability coordinator areas** or **balancing authorities**.

MR8 Intentionally left blank.

MR9 If a **remedial action scheme** is armed and that system could have had an inter-area impact, the **ISO** may have evidence that could include, but is not limited to, procedural documents, operator logs, computer analysis, training modules, training records or equivalent evidence that will be used to confirm that it was aware of the impact of that **remedial action scheme** on inter-area flows.

MR10 If there is an instance where there is a disagreement on a derived limit, the **ISO** may have evidence that could include, but is not limited to, operator logs, voice recordings, electronic communications or equivalent evidence that will be used to determine if it operated the **bulk electric system** to the most limiting parameter.

MR11 The **ISO** may have evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it respected the **system operating limits** or **interconnection reliability operating limits** in accordance with regional **total transfer capability** and **available transfer capability** processes.

MR12 Intentionally left blank.

Revision History

Effective Date	Description
2015-04-01	Initial release.
2016-08-30	Inclusion of the defined term **system element**.