

#### 1. Purpose

The purpose of this **reliability standard** is to address the effects of operating emergencies by ensuring the **ISO** and each applicable **operator** of a **transmission facility** has developed one or more operating plans to mitigate operating emergencies, and that those plans are coordinated within Alberta.

#### 2. Applicability

This **reliability standard** applies to:

- (a) the **operator** of a **transmission facility** that is part of the **bulk electric system**; and
- (b) the **ISO**

This **reliability standard** does not apply to the **operator** of a **transmission facility** whose **transmission facilities** are only:

- (c) **radial circuits** connecting to any one or more of:
  - (i) load;
  - (ii) one or more **generating units**; and
  - (iii) one or more **aggregated generating facilities**; or
- (d) part of an industrial complex, or connected to an industrial complex, and cannot interrupt power flow on the **interconnected electric system** other than power flow on its own **transmission facilities**.

#### 3. Requirements

**R1** Each **operator** of a **transmission facility** must develop, maintain, and, in the event of an operating emergency, implement one or more **ISO**-reviewed operating plans to mitigate operating emergencies in its area. The operating plans must include the following, as applicable:

**R1.1** roles and responsibilities for activating the operating plans;

**R1.2** processes to prepare for and mitigate operating emergencies including:

**R1.2.1** notification to the **ISO**, to include current and projected conditions, when experiencing an operating emergency;

**R1.2.2** coordination with the **ISO** for the cancellation or recall of **transmission facility** outages;

**R1.2.3** requests to the **ISO** for **transmission system** reconfiguration;

**R1.2.4** requests to the **ISO** to change generation level;

**R1.2.5** provisions for manual load shedding that minimizes the overlap with automatic load shedding and are capable of being implemented in a timeframe adequate for mitigating the emergency; and

**R1.2.6** **reliability** impacts of extreme weather conditions.

**R1A** The **ISO** must develop, maintain, and implement one or more operating plans to mitigate operating emergencies on the **interconnected electric system**. The operating plans must include the following, as applicable:

**R1A.1** roles and responsibilities for activating the operating plans;

**R1A.2** processes to prepare for and mitigate operating emergencies including:

**R1A.2.1** intentionally left blank;

**R1A.2.2** cancellation or recall of **transmission facility** and **generating unit** outages;

- R1A.2.3 transmission system** reconfiguration;
  - R1A.2.4** provisions to issue **directives** for managing generation level;
  - R1A.2.5** provisions to issue **directives** for manual load shedding for mitigating the emergency; and;
  - R1A.2.6 reliability** impacts of extreme weather conditions.
- R2** The **ISO** must develop, maintain, and implement one or more operating plans to mitigate capacity emergencies and energy emergencies within its **balancing authority area**. The operating plans must include the following, as applicable:
  - R2.1** roles and responsibilities for activating the operating plans;
  - R2.2** processes to prepare for and mitigate emergencies including:
    - R2.2.1** intentionally left blank;
    - R2.2.2** declaring an energy emergency alert, in accordance with Appendix 1;
    - R2.2.3** managing generating resources in its **balancing authority area** to address:
      - R2.2.3.1** capability and availability;
      - R2.2.3.2** fuel supply and inventory concerns;
      - R2.2.3.3** fuel switching capabilities; and
      - R2.2.3.4** environmental constraints;
    - R2.2.4** public appeals for voluntary load reductions;
    - R2.2.5** intentionally left blank;
    - R2.2.6** intentionally left blank;
    - R2.2.7** use of **interruptible demand**, curtailable load and demand response;
    - R2.2.8** provisions to issue **directives** for manual load shedding for mitigating the emergency; and
    - R2.2.9 reliability** impacts of extreme weather conditions.
- R3** The **ISO** must review the operating plans to mitigate operating emergencies submitted by an **operator** of a **transmission facility** regarding any **reliability** risks that are identified between operating plans,
  - R3.1** within 60 **days** of receiving the initial operating plans and within 30 **days** of receiving subsequent operating plans, the **ISO** must:
    - R3.1.1** review each submitted operating plan on the basis of compatibility and inter-dependency with operating plans of the **ISO** and other **operators** of a **transmission facility**;
    - R3.1.2** review each submitted operating plan for coordination to avoid risk to wide-area **reliability**; and
    - R3.1.3** notify each **operator** of a **transmission facility** of the results of its review, specifying any time frame for resubmittal of its operating plans if revisions are identified.
- R4** Each **operator** of a **transmission facility** must address any **reliability** risks the **ISO** identifies pursuant to requirement R3 and resubmit the related operating plans to the **ISO** within a time period the **ISO** specifies.
- R5** The **ISO** must, when it identifies an operating emergency, notify within 30 minutes from the time of identification, any affected adjacent **reliability coordinators**.

**R6** The **ISO** must, when experiencing a potential or actual energy emergency within Alberta declare an energy emergency alert, as detailed in Appendix 1.

#### 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 developing, maintaining, and implementing operating plans, and having operating plans reviewed as required in requirement R1 exists. Evidence of:

- developing an operating plan may include documented operating plans with effective dates;
- maintaining an operating plan may include documented operating plans with version history;
- implementing an operating plan may include **operator** logs, voice recordings, system logs, sequence of events records or disturbance reports;
- having operating plan reviewed by the **ISO**, as applicable, which may include emails; or
- other equivalent evidence.

**MR2** Evidence of developing, maintaining, and implementing one or more operating plans to mitigate capacity emergencies and energy emergencies as required in requirement R2 exists. Evidence may include documented operating plans with effective dates, **operator** logs, voice recordings, system logs, sequence of events records, disturbance reports, or other equivalent evidence.

**MR3** Evidence of reviewing operating plans as required in requirement R3 exists. Evidence may include dated e-mails, other correspondence, or other equivalent evidence.

**MR4** Evidence of addressing **reliability** risks identified in an operating plan as required in requirement R4 exists. Evidence may include dated emails, other correspondence, version history showing that the **operator** of a **transmission facility** has responded and updated the operating plan, or other equivalent evidence.

**MR5** Evidence of notifying affected adjacent **reliability coordinators** as required in requirement R5 exists. Evidence may include **operator** logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence.

**MR6** Evidence of declaring an energy emergency alert as required in requirement R6 exists. Evidence may include **operator** logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence.

#### 5. Appendices

Appendix 1 - *Energy Emergency Alerts*

##### Revision History

Date	Description
2022-01-01	Initial release.

## Appendix 1 Energy Emergency Alerts

### Introduction

This Appendix 1 provides the process and descriptions of the levels the **ISO** uses to communicate the condition of its **balancing authority area** when it is experiencing an energy emergency.

#### A. General Responsibilities

1. Initiation. The **ISO** may initiate an energy emergency alert.
2. Notification. The **ISO** must, when it declares an energy emergency alert, notify all adjacent **reliability coordinators**.

#### B. Energy Emergency Alert Levels

The **ISO** may declare whatever energy emergency alert level is necessary and need not proceed through the energy emergency alerts sequentially.

##### 1. EEA 1 — All available generation resources in use.

Circumstances:

- The **ISO** is experiencing conditions where all available generation resources are committed to meet firm load, firm transactions, and reserve commitments, and is concerned about sustaining its required **contingency reserve**.
- Non-firm wholesale energy sales, other than those that are recallable to meet reserve requirements, have been curtailed.

##### 2. EEA 2 — Load management procedures in effect.

Circumstances:

- The **ISO** is no longer able to provide its expected energy requirements and is energy deficient.
- The **ISO** has implemented its operating plans to mitigate emergencies.
- The **ISO** is still able to maintain minimum **contingency reserve** requirements.

During EEA 2, the **ISO** has the following responsibilities:

- 2.1 notify **adjacent balancing authorities**.
- 2.2 the **ISO** must update the energy emergency alert levels as changes occur and pass this information on to the adjacent **reliability coordinators**, **adjacent balancing authorities**, and adjacent **interconnected transmission operators**.
- 2.3 sharing information on resource availability: The **ISO** must coordinate, as appropriate, with the **reliability coordinator** that has an energy deficient **balancing authority**.
- 2.4 evaluating and mitigating transmission limitations: The **ISO** must review **transmission facility** outages and work with the **operator** of a **transmission facility** to see if it is possible to return to service any transmission elements that may relieve the loading on **system operating limits** or **interconnection reliability operating limits**.
- 2.5 before declaring an EEA 3, the **ISO** must make use of all available resources; including:
  - 2.5.1 all available **generating units** are online: All **generating units** capable of being online in the time frame of the emergency are online.
  - 2.5.2 **demand-side management**: Activate **demand-side management** within provisions of any applicable agreements.

##### 3. EEA 3 — Firm Load interruption is imminent or in progress.

Circumstances:

- The **ISO** is unable to meet minimum **contingency reserve** requirements.

During EEA 3, the **ISO** has the following responsibilities:

- 3.1 continue actions from EEA 2. The **ISO** must continue to take all actions initiated during EEA 2.
- 3.2 the **ISO** must update its information as changes occur and pass this information on to the adjacent **reliability coordinators**, **adjacent balancing authorities** and adjacent **interconnected transmission operators** until the EEA 3 is terminated.
- 3.3 re-evaluating and revising **system operating limits** and **interconnection reliability operating limits**. The **ISO** must evaluate the risks of revising **system operating limits** and **interconnection reliability operating limits**. The **ISO** must coordinate the re-evaluation of **system operating limits** and **interconnection reliability operating limits** with other affected **reliability coordinators**. The **ISO** may only revise **system operating limits** and **interconnection reliability operating limits** as long as an EEA 3 condition exists. The following are minimum requirements that the **ISO** must meet before **system operating limits** or **interconnection reliability operating limits** are revised:
  - 3.3.1 the **ISO** must, when it is energy deficient, immediately take whatever actions are necessary to mitigate any undue risk to the **Interconnection** which may include load shedding.
- 3.4 returning to pre-emergency conditions: Whenever energy is made available such that the systems can be returned to its pre-emergency **system operating limits** and **interconnection reliability operating limits**, the **ISO** may downgrade the alert level.
  - 3.4.1 notification of other parties. Upon the **ISO** downgrading an alert level, it must notify the adjacent **reliability coordinators**, **adjacent balancing authorities** and adjacent **transmission operators** that systems can be returned to normal limits.

Alert 0 - Termination. When the **ISO** is able to meet its load and **operating reserve** requirements, it must terminate the energy emergency alert. The **ISO** must notify all other adjacent **reliability coordinators**, **adjacent balancing authorities** and adjacent **transmission operators** of the termination.