

1. Purpose

The purpose of this **reliability standard** is to ensure that **disturbance monitoring equipment** is installed and that **disturbance** data is reported in accordance with regional requirements to facilitate analyses of events.

2. Applicability

This **reliability standard** applies to:

- (a) the **legal owner** of a **transmission facility** that owns **disturbance monitoring equipment** as identified in the list of *Disturbance Monitoring Equipment Locations* as required in requirement R1, as published by the **ISO** on the AESO website and as amended from time to time by the **ISO** on notice to **market participants**;
- (b) the **legal owner** of a **generating unit** that owns **disturbance monitoring equipment** as identified in the list of *Disturbance Monitoring Equipment Locations* as required in requirement R1, as published by the **ISO** on the AESO website and as amended from time to time by the **ISO** on notice to **market participants**;
- (c) the **legal owner** of an **aggregated generating facility** that owns **disturbance monitoring equipment** as identified in the list of *Disturbance Monitoring Equipment Locations* as required in requirement R1, as published by the **ISO** on the AESO website and as amended from time to time by the **ISO** on notice to **market participants**; and
- (d) the **ISO**.

3. Requirements

- R1** The **ISO** must maintain and publish a list of all **disturbance monitoring equipment** that this **reliability standard** applies to which includes all **disturbance monitoring equipment** the **WECC** requires to be installed in Alberta.
- R2** Each **legal owner** of a **transmission facility**, **legal owner** of a **generating unit** and **legal owner** of an **aggregated generating facility** that the **ISO** directs to install **disturbance monitoring equipment** must install such **disturbance monitoring equipment** with internal clocks synchronized to within two (2) milliseconds or less of the Universal Coordinated Time scale.
- R3** The **ISO** must have recorded **disturbance** data available for retrieval for at least ten (10) **days**.
- R4** Each **legal owner** of a **transmission facility**, **legal owner** of a **generating unit** and **legal owner** of an **aggregated generating facility** must install **disturbance monitoring equipment** as directed by the **ISO**.
- R5** Each **legal owner** of a **transmission facility**, **legal owner** of a **generating unit** and **legal owner** of an **aggregated generating facility** must report, within thirty (30) **days** of the **ISO**'s request, the following information on the **disturbance monitoring equipment**:
- R5.1** type of **disturbance monitoring equipment**;
 - R5.2** make and model of **disturbance monitoring equipment**;
 - R5.3** installation location;
 - R5.4** operational status;

- R5.5 date last tested;
- R5.6 monitored elements which may include transmission circuit and bus section;
- R5.7 monitored devices which may include circuit breaker, disconnect status and alarms; and
- R5.8 monitored electrical quantities, which may include voltage and current.
- R6 The **ISO** must provide the information received from the **legal owner** of a **transmission facility**, **legal owner** of a **generating unit** and **legal owner** of an **aggregated generating facility** in requirement R5 to the **WECC** within forty-five (45) **days** of the **WECC**'s written request.
- R7 If the **ISO** is unable to directly access **disturbance** data, then each **legal owner** of a **transmission facility**, **legal owner** of a **generating unit** and **legal owner** of an **aggregated generating facility** must provide all available **disturbance** data recorded by **disturbance monitoring equipment** to the **ISO** within forty-five (45) **days** of the **ISO**'s written request.
- R8 The **ISO** must provide all available **disturbance** data recorded by the **disturbance monitoring equipment** of a **legal owner** of a **transmission facility**, **legal owner** of a **generating unit** and **legal owner** of an **aggregated generating facility** to the **WECC** within sixty (60) **days** of the **WECC**'s written request.
- R9 The **ISO** must archive all data recorded by **disturbance monitoring equipment** for all **WECC** or **ISO** identified events for at least three (3) years.
- R10 Each **legal owner** of a **transmission facility**, **legal owner** of a **generating unit** and **legal owner** of an **aggregated generating facility** that the **ISO** directs to have **disturbance monitoring equipment** must develop, implement and maintain a maintenance and testing program for **disturbance monitoring equipment** that includes:
 - R10.1 maintenance and testing intervals and their basis; and
 - R10.2 a summary of maintenance and testing procedures.

4 Measures

The following measures correspond to the requirements identified in Section 4 of this **reliability standard**. For example, MR1 is the measure for R1.

- MR1 Evidence of maintaining and publishing a list as required in requirement R1 exists. Evidence may include a list published on the AESO's website that identifies the effective date and revision history.
- MR2 Evidence of having internal clocks in the installed **disturbance monitoring equipment** synchronized as required in requirement R2 exists. Evidence may include: the manufacturer's equipment specification, commissioning documents or GPS clock records that demonstrate each installed **disturbance monitoring equipment**'s internal clock is synchronized in accordance with R2.
- MR3 Evidence of having recorded **disturbance** data available for retrieval as required in requirement R3 exists. Evidence may include **disturbance** records.
- MR4 Evidence of installing **disturbance monitoring equipment** as required in requirement R4 exists. Evidence may include documentation of the installation of the **disturbance monitoring equipment**.
- MR5 Evidence of reporting information as required in requirement R5 exists. Evidence may include email or mail to the appropriate **ISO** recipient that identifies information submitted.
- MR6 Evidence of providing data as required in requirement R6 exists. Evidence may include email or mail to the appropriate **WECC** recipient that identifies data submitted.

- MR7** Evidence of providing data as required in requirement R7 exists. Evidence may include email or mail to the appropriate **ISO** recipient that identifies data submitted.
- MR8** Evidence of providing data as required in requirement R8 exists. Evidence may include email or mail to appropriate **WECC** recipient that identifies data submitted.
- MR9** Evidence of archiving data as required in requirement R9 exists. Evidence may include dated archived data files.
- MR10** Evidence of developing, implementing and maintaining a maintenance and testing program as required in requirement R10 exists. Evidence may include a documented maintenance and testing program, maintenance and testing records showing the test date, type of test, what was tested and test results.
 - MR10.1** Evidence of developing, implementing and maintaining a maintenance and testing program as required in requirement R10.1 exists. Evidence may include a documented maintenance and testing program that includes the provision as required in requirement R10.1.
 - MR10.2** Evidence of developing, implementing and maintaining a maintenance and testing program as required in requirement R10.2 exists. Evidence may include a documented maintenance and testing program that includes the provision as required in requirement R10.2.

5. Appendices

No appendices have been defined for this **reliability standard**.

Revision History

Effective	Description
20xx-00-00	