

Alberta Reliability Standard

Analysis and Mitigation of Transmission and Generation Protection System Misoperation

PRC-004-AB2-1



PRC-004-AB1-1 Analysis and Mitigation of Transmission and Generation Protection System Misoperation

1. ~~4.~~ Purpose

The purpose of this **reliability standard** is to ensure all **misoperations of** transmission and generation **protection system misoperations systems** affecting the **reliability** of the **BES bulk electric system** are analyzed and mitigated.

2. ~~2.~~ Applicability

This **reliability standard** applies to:

- (a) the **legal owner** of a **transmission facility**;
- (b) the **legal owner** of a **generating unit** that:
 - (i) is not part of an aggregated generating facility;
 - (ii) has a **maximum authorized real power** rating greater than **four point five (4.5) MW**;
 - (iii) is directly connected to the **transmission system** or to **transmission facilities** within the City of Medicine Hat; and
 - (iv) has **protection systems** that directly affect the **reliability** of the **bulk electric system** ~~which such protection systems are those that measure voltage, current, or frequency from the generating unit to the interconnected electric system, but exclude the prime mover and associated control systems~~;
- (c) the **legal owner** of an **aggregated generating facility** that:
 - (i) is directly connected to the transmission system or to transmission facilities within the City of Medicine Hat;
 - (ii) has a **maximum authorized real power** rating greater than **four point five (4.5) MW**; and
 - (iii) has **protection systems** that directly affect the **reliability** of the **bulk electric system**. ~~These protection systems are those that measure voltage, current, or frequency from the aggregated generating facility to the interconnected electric system~~; and
- (d) the **ISO**.

3. ~~3.~~ Definitions

~~Italicized terms used in this reliability standard have the meanings as set out in the Consolidated Authoritative Document Glossary.~~

3. ~~4.~~ Requirements

R1- Each **legal owner** of a **transmission facility**, **legal owner** of a **generating unit** and **legal owner** of an **aggregated generating facility** must analyze **misoperations of** its **protection systems** affecting **the reliability of the bulk electric system** ~~misoperations~~, and develop and implement a corrective action plan to avoid future **misoperations** of a similar nature.

~~PRG-004-AB-1~~ **Alberta Reliability Standard**
**Analysis and Mitigation of Transmission and
Generation Protection System Misoperation**
PRC-004-AB2-1



R2 Each **legal owner** of a **transmission facility**, **legal owner** of a **generating unit** and **legal owner** of an **aggregated generating facility** must provide to the **ISO** documentation of its **misoperations** analyses and corrective action plans upon request by the **ISO**.

R3 The **ISO** must provide to the WECC documentation of the **misoperations** analyses and corrective action plans upon request by the WECC.

~~5. Processes and Procedures~~

~~No procedures have been defined for this reliability standard.~~

~~4. 6. Measures~~

The following measures correspond to the requirements identified in ~~Section 4~~section 3 of this **reliability standard**. For example, MR1 is the measure for requirement R1.

MR1 Evidence of analyzing misoperations, and developing and implementing a corrective action plan as required in requirement R1 exists and shows. Evidence may include reports that include analysis ~~was completed~~ and corrective action plans ~~were implemented as specified in requirement R1~~, emails, work orders, or other equivalent evidence.

MR2 Evidence ~~that analysis reports of providing to the ISO documentation of misoperations analyses and corrective action plans were submitted as specified~~required in requirement R2 ~~(e.g. email confirmation)~~ exists. Evidence may include emails, dated correspondence, or other equivalent evidence.

MR3 ~~Confirmation that Evidence of providing to the WECC documentation of the misoperations analyses and corrective action plans as specified~~required in requirement R3 ~~was received by WECC~~ exists. Evidence may include emails, dated correspondence, or other equivalent evidence ~~that requests for confirmation were made~~.

~~7. Appendices~~

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

~~8. Guidelines~~

~~No guidelines have been defined for this reliability standard.~~

~~PRC-004-AB-1~~ Alberta Reliability Standard Analysis and Mitigation of Transmission and Generation Protection System Misoperation PRC-004-AB2-1



Revision History

<u>Effective</u> Date	Description
<u>2018-xx-xx</u>	<u>Clarification to ensure the protections system misoperations that must be analyzed are those affecting the reliability of the bulk electric system. Administrative update: existing PRC-004-AB1-1 is being renamed PRC-004-AB2-1; and amendments to ensure consistent use of defined terms as included in the AESO's Consolidated Authoritative Document Glossary ("CADG"); formatting and grammatical corrections; the deletion of the following sections:</u> <u>(a) "Definitions";</u> <u>(b) "Processes and Procedures";</u> <u>(c) "Appendices"; and</u> <u>(d) "Guidelines"</u>
2013-01-02	Administrative update – "TFO" and "GFO" replaced with "legal owner of a transmission facility", "legal owner of a generating unit" and "legal owner of an aggregated generating facility"; and other minor clean up items.
2010-02-11	New Issue <u>Initial release.</u>