

January 31, 2019

To: Stakeholders and Other Interested Parties

Re: Consultation Letter – Proposed Amendments to Previously Approved PRC-005-AB-6 Protection System, Automatic Reclosing and Sudden Pressure Relaying Maintenance (“previously approved PRC-005-AB-6”), and rename as PRC-005-AB1-6 Protection System, Automatic Reclosing and Sudden Pressure Relaying Maintenance (“Amended PRC-005-AB1-6”)

Section 19 of the *Transmission Regulation* requires the Alberta Electric System Operator (“AESO”) to consult with stakeholders likely to be directly affected by the AESO’s adoption or making of Alberta reliability standards, and also requires the AESO to forward the proposed Alberta reliability standards to the Alberta Utilities Commission (“AUC” or “Commission”) for review along with the AESO’s recommendation that the Commission approve or reject them.

Accordingly, the AESO is providing notice and seeking comments from stakeholders on the attached proposed amended PRC-005-AB1-6.

Applicability

The proposed amended PRC-005-AB1-6 is applicable to the entities identified in subsection 2.1, and the devices listed in subsection 2.2, unless exempted under subsection 2.3.

2.1 This reliability standard applies to:

- (a) the legal owner of a transmission facility that:
 - (i) is part of the bulk electric system, excluding a transformer that does not have its primary terminal and at least one secondary terminal energized at 100 kV or higher; or
 - (ii) is material to this reliability standard and to the reliability of either the interconnected electric system or the City of Medicine Hat electric system, as the AESO determines and includes on a list published on the AESO website, which the AESO may amend from time to time in accordance with the process set out in Appendix 3;
- (b) the legal owner of a generating unit that:
 - (i) has a maximum authorized real power rating greater than 18 MW and is either:
 - (A) directly connected to the transmission system,
 - (B) directly connected to transmission facilities within the City of Medicine Hat, or
 - (C) part of an industrial complex that is directly connected to the transmission system or to transmission facilities within the City of Medicine Hat;
 - (ii) is within a power plant that:
 - (A) is not part of an aggregated generating facility;
 - (B) is directly connected to the transmission system or to transmission facilities within the City of Medicine Hat; and
 - (C) has a combined maximum authorized real power rating greater than 67.5 MW;
 - (iii) is a black start resource; or

- (iv) is material to this reliability standard and to the reliability of either the interconnected electric system or the City of Medicine Hat electric system, regardless of the maximum authorized real power rating of the generating unit, as the AESO determines and includes on a list published on the AESO website, which the AESO may amend from time to time in accordance with the process set out in Appendix 3;
- (c) the legal owner of an aggregated generating facility that:
 - (i) has a maximum authorized real power rating greater than 67.5 MW and is either:
 - (A) directly connected to the transmission system;
 - (B) directly connected to transmission facilities within the City of Medicine Hat; or
 - (C) part of an industrial complex that is directly connected to the transmission system or to transmission facilities within the City of Medicine Hat;
 - (ii) is a black start resource; or
 - (iii) is material to this reliability standard and to the reliability of either the interconnected electric system or the City of Medicine Hat electric system, regardless of the maximum authorized real power rating of the aggregated generating facility, as the AESO determines and includes on a list published on the AESO website, which the AESO may amend from time to time in accordance with the process set out in Appendix 3.

2.2 This reliability standard applies to the following devices:

- (a) protection systems and sudden pressure relaying that are installed for the purpose of detecting faults on system elements as identified in section 2.1;
- (b) protection systems used for the AESO's underfrequency load shedding program;
- (c) protection systems used for undervoltage load shed systems installed to prevent system voltage collapse or voltage instability for the reliability of the interconnected electric system;
- (d) protection systems installed as a remedial action scheme for the reliability of the interconnected electric system;
- (e) protection systems and sudden pressure relaying for generating units, including:
 - (i) protection systems that act to trip the generating unit either directly or via lockout or auxiliary tripping relays;
 - (ii) protection systems and sudden pressure relaying for generating unit step-up transformers; and
 - (iii) protection systems and sudden pressure relaying for station service or excitation transformers connected to the generating unit bus, that act to trip the generating unit either directly or via lockout or tripping auxiliary relays;
- (f) protection systems and sudden pressure relaying for aggregated generating facilities from and including the collector bus to a common point of connection at 100 kV or above;
- (g) automatic reclosing, including:
 - (i) automatic reclosing applied on all transmission lines connected to a bus operated at a voltage level of 100 kV or higher located at generating plant substations where the combined maximum authorized real power is greater than 500 MW;
 - (ii) automatic reclosing applied on all transmission line terminals operated at a voltage level of 100 kV or higher at substations one bus away from generating plants specified in Section 2.2 (g)(i) when the substation is less than 10 circuit-miles from the generating plant substation; and
 - (iii) automatic reclosing applied as an integral part of a remedial action scheme specified in subsection (d) above.

2.3 Automatic reclosing addressed in subsections 2.2(g)(i) and 2.2(g)(ii) may be excluded if the equipment owner can demonstrate to the AESO that a close-in three-phase fault present for twice the normal clearing time (capturing a minimum trip-close-trip time delay) does not result in a total loss of gross generation in either the interconnected electric system or the City of Medicine Hat electric system exceeding the gross capacity of the largest generating unit where the automatic reclosing is applied.

Background

The purpose of this reliability standard is to document and implement programs for the maintenance of all protection systems, automatic reclosing, and sudden pressure relaying affecting the reliability of the transmission system to ensure the reliability of the interconnected electric system.

On July 24, 2018, the AESO forwarded PRC-005-AB-6, recommending approval of the Alberta reliability standard. The Commission registered this filing as Application 23767-A001 and designated it as Proceeding 23767. No objections were received and the reliability standard was approved as recommended by the AESO in the Commission's Decision 23767-D01-2018, dated August 24, 2018, with an effective date of October 1, 2019.

Subsequent to receiving the Commission's approval of PRC-005-AB-6 on August 24, 2018, the AESO reviewed the reliability standard in order to provide clarification to a stakeholder and discovered that amendments were required to the implementation plan to include references to Tables 4 and 5 that were missing from section 5.5 in Appendix 5. The reference was added to apply a phased implementation for devices in Tables 4 and 5 that have a 12 year maximum maintenance interval. Without the references to Table 4 and 5, maintenance on all of the applicable devices would not be required to be completed until the end of the 12th year.

Additional amendments were also made for clarity and corrections as listed in the summary of proposed changes below.

Summary of Proposed Changes

Upon review of the implementation plan and previously approved PRC-005-AB-6 in general, the AESO made the following Alberta variance and administrative amendments:

Alberta variance:

- added a provision in 2.1(a)(ii) to enable the AESO to apply proposed amended PRC-005-AB1-6 to transmission facilities below the bulk electric system level as the AESO determines to be material to this reliability standard and to the reliability of either the interconnected electric system or City of Medicine Hat electric system.

Administrative amendments:

- previously approved PRC-005-AB-6, *Protection System, Automatic Reclosing and Sudden Pressure Relaying Maintenance* is being renamed PRC-005-AB1-6 *Protection System, Automatic Reclosing and Sudden Pressure Relaying Maintenance*;
- added clarity by moving the reference to the bulk electric system and the exclusion of certain types of transformers from Applicability section 2.2(a) to 2.1(a)(i);
- references to Tables 4 and 5 were missing from section 5.5 of the implementation plan in Appendix 5. The AESO added in the references in the amendment;
- added a reference to section 2.1(a)(ii) in Appendix 3, *Amending Process for List of Facilities*, to reference the new subsection added as described in the previous bullet;
- added a reference to transmission facility in items (a) and (b) of Appendix 3 *Amending Process for List of Facilities*;
- corrected a typo in Appendix 3 to refer to subsection 2.1(b)(vi) instead of 2.1(iv); and
- replaced the descriptions of the compliance dates in Appendix 5, *Implementation Plan*, with the actual calendar dates.

In addition, the AESO made amendments to ensure consistent use of defined terms as included in the AESO's [Consolidated Authoritative Document Glossary](#) ("CADG"). Administrative changes, such as formatting and grammatical corrections, have also been made in the proposed amended PRC-005-AB1-6.

Defined Terms

When reviewing the attached proposed amended PRC-005-AB1-6, stakeholders should note that all defined terms appear **bolded**. Stakeholders and other interested parties are encouraged to refer to the AESO's CADG when reviewing proposed Alberta reliability standards to ensure they have an accurate understanding of those defined terms.

Implementation of Alberta Reliability Standards

In accordance with Section 19 of the *Transmission Regulation*, the reliability standards that apply in Alberta are those of the Electric Reliability Organization ("ERO") or any other reliability standards, to the extent that such reliability standards are adopted by the AESO after consultation with stakeholders and after receipt of Commission approval. The NERC was certified as the ERO for the United States by the Federal Energy Regulatory Commission under the US *Energy Policy Act* of 2005. Further, the NERC was recognized as the ERO by the Minister of Energy in Alberta.

Alberta reliability standards and definitions proposed for approval or rejection by the AESO are developed:

- (a) based on the reliability standards and definitions of the NERC; or
- (b) to amend, supplement or replace the NERC reliability standards or definitions.

For more information on the AESO's reliability standards, visit the AESO website at www.aeso.ca and follow the path Rules, Standards and Tariff > Alberta Reliability Standards.

Request for Comment

Please use the attached Stakeholder Comment Matrix when submitting comments to the AESO. Only written comments will be considered in finalizing proposed amended PRC-005-AB1-6. Stakeholders should ensure that comments provided represent all interests within their organization. The scope of comments is limited to proposed amended PRC-005-AB1-6. Any comments received that are outside of this scope will not be considered by the AESO.

Stakeholders are asked to provide comments no later than **February 15, 2019** to ars_comments@aeso.ca. Adherence to deadlines is essential to the integrity of the Alberta reliability standard comment process. As such, any stakeholder comments received after February 15, 2019 may not be published, replied to, or otherwise considered by the AESO.

The AESO will be publishing all comments received for industry review in February, 2019. The AESO expects to publish replies to the comments with the final proposed amended PRC-005-AB1-6 in February, 2019.

If the AESO does not receive comments regarding proposed amended PRC-005-AB1-6, the AESO expects to forward the proposed amended PRC-005-AB1-6 to the Commission in February, 2019, along with its recommendation that the Commission approve the proposed amended PRC-005-AB1-6, to become effective as set out in the implementation plan, which is the same as the effective date in the current PRC-005-AB-6.

Attachments to Consultation Letter

The following documents are attached:

1. [Stakeholder Comment Matrix for proposed amended PRC-005-AB1-6](#); and
2. [Blackline](#) and [clean](#) copies of proposed amended PRC-005-AB1-6.

Sincerely,

"Melissa Mitchell-Moisson"

Melissa Mitchell-Moisson
Regulatory Coordinator
Phone: 403-539-2948
Email: melissa.mitchell-moisson@aeso.ca

Attachments