June 9, 2020

To: Market Participants and Other Interested Parties ("Stakeholders")

Re: Consultation Letter – Proposed Amended Alberta Reliability Standard PRC-005-AB1-6, *Protection System, Automatic Reclosing and Sudden Pressure Relaying Maintenance* ("PRC-005-AB1-6") and rename as PRC-005-AB2-6 *Protection System, Automatic Reclosing and Sudden Pressure Relaying Maintenance* ("PRC-005-AB2-6")

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 reliability standards, and also requires the AESO to forward the proposed reliability standards to the Alberta Utilities Commission ("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-AB2-6.

Applicability

Proposed amended PRC-005-AB2-6 would apply to the entities identified in subsection 2.1 of that reliability standard as follows:

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 any transformer with less than 2 terminals energized at 100 kV or higher;

(ii) is not part of the bulk electric system, and owns any of the following:

(A) the protection systems used for the AESO's underfrequency load shedding program;

(B) the 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;

(C) protection systems installed as a remedial action scheme, including automatic reclosing applied as an integral part of a remedial action scheme, for the reliability of the interconnected electric system; 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, 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

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(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;

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(g) automatic reclosing :

(i) 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) 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) 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.

The Commission originally approved PRC-005-AB-6 on August 24, 2018. Subsequent to this approval, 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 AESO forwarded notice of amended PRC-005-AB1-6 to the Commission and the amended reliability standard was approved as recommended by the AESO in the Commission's Decision 24608-D01-2019, dated June 26, 2019, with an effective date of October 1, 2019.

Subsequent to receiving the Commission's approval of amended PRC-005-AB1-6 on June 26, 2019, the AESO reviewed the reliability standard in order to provide clarification to a stakeholder and discovered that amendments were required to ensure that the language is consistent with the intention of the North American Electric Reliability Corporation ("NERC") as described in its *Supplementary Reference and FAQ PRC-005-6 Protection System, Automatic Reclosing, and Sudden Pressure Relaying Maintenance and Testing* dated October 2015 (the "NERC Guidance"). The revision to proposed amended PRC-005-AB2-6 will clarify that existing PRC-005-AB1-6 applies only to the sub-set of automatic reclosers enumerated in subsection 2.2(g) and not to all automatic reclosers installed on the transmission system.

Section 2.4.1 of the NERC Guidance states that "automatic reclosing includes reclosing relays and the associated dc control circuitry" and that section 4.2.7 of NERC PRC-005 "specifically limits the applicable reclosing relays to the enumerated list in the section."

The NERC Guidance provides the following rationale regarding the applicability of the standard to automatic reclosers:

> "The Applicability as detailed above was recommended by the NERC System Analysis and Modeling Subcommittee (SAMS) after a lengthy review of the use of reclosing within the BES. SAMS concluded that automatic reclosing is largely implemented throughout the BES as an operating convenience, and that automatic reclosing mal-performance affects BES reliability only when the reclosing is part of a Remedial Action Scheme, or when premature auto reclosing has the potential to cause generating unit or plant instability. A technical report, "Considerations for Maintenance and Testing of Auto reclosing Schemes — November 2012", is referenced in NERC PRC-005-3 and provides a more detailed discussion of these concerns."

Summary of Proposed Changes

Upon review of the previously approved PRC-005-AB1-6, the AESO made the following amendments:

Alberta variances:

- Section 2.2(g) of the "Applicability" section has been revised to provide clarity and certainty that this reliability standard applies only to those automatic reclosers enumerated in section 2.2(g).

Administrative amendments:

- Existing reliability standard PRC-005-AB1-6 is being renamed PRC-005-AB2-6.

The implementation plan was revised to make a general reference to PRC-005-AB due to the number of versions of the reliability standard that have gone into effect since it was first approved by the Commission. In addition, administrative changes, such as formatting and grammatical corrections have also been made in the proposed amended PRC-006-AB2-6.

Defined Terms

When reviewing the attached proposed PRC-005-AB2-6, Stakeholders should note that all defined terms appear **bolded**. Stakeholders are encouraged to refer to the AESO's CADG when reviewing proposed reliability standards to ensure they have an accurate understanding of those defined terms.

Implementation of 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.

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-AB2-6. Stakeholders should ensure that comments provided represent all interests within their organization. Please respond to the questions in the attached *Stakeholder Comment Matrix* and provide your specific comments, proposed revisions, and reasons for your position. Providing general comments does not give the AESO any specific issues to consider and address, and results in a general response. The scope of comments is limited to proposed amended PRC-005-AB2-6. 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 **July 8, 2020** to ars_comments@aeso.ca. Adherence to deadlines is essential to the integrity of the comment process, and as such, the AESO may choose not to consider any Stakeholder comments received after the deadline.

The AESO will be publishing all comments received for industry review in July. The AESO expects to publish replies to the comments with the final proposed amended PRC-005-AB2-6 in August.

If the AESO does not receive comments regarding proposed amended PRC-005-AB2-6, the AESO expects to forward the proposed amended PRC-005-AB2-6 to the Commission in August, along with its recommendation that the Commission approve the proposed amended PRC-005-AB2-6, to become effective upon approval by the Commission.

Attachments to Consultation Letter

The following documents are attached:

1. *Stakeholder Comment Matrix* for proposed amended PRC-005-AB2-6; and
2. Blackline and clean copies of proposed amended PRC-005-AB2-6.

Sincerely,

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Attachments

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