

August 21, 2020

To: Alberta Utilities Commission (“AUC” or “Commission”)

Re: Forwarding Notice – Final proposed new standards, retirement of existing standards and not adopt a North American Electric Reliability Corporation (“NERC”) standard:

1. Proposed new Alberta reliability standards for adoption:
 - (a) EOP-011-AB-1, *Emergency Operations* (“EOP-011-AB-1”);
 - (b) PRC-006-AB-3, *Automatic Underfrequency Load Shedding* (“PRC-006-AB-3”); and
 - (c) PRC-010-AB-2, *Under Voltage Load Shedding* (“PRC-010-AB-2”);(collectively referred to as “new reliability standards”);
2. Proposed retirement of existing Alberta reliability standards:
 - (a) EOP-001-AB1-2.1b, *Emergency Operations Planning* (“EOP-001-AB1-2.1b”);
 - (b) EOP-002-AB1-2, *Capacity and Energy Emergencies* (“EOP-002-AB1-2”);
 - (c) EOP-003-AB1-1, *Load Shedding Plans* (“EOP-003-AB1-1”);
 - (d) PRC-009-AB-0, *UFLS Performance Following an Underfrequency Event* (“PRC-009-AB-0”);
 - (e) PRC-010-AB-0, *Assessment of the Design and Effectiveness of UVLS Program* (“PRC-010-AB-0”);
 - (f) PRC-021-AB1-1, *Under Voltage Load Shedding Program Data* (“PRC-021-AB1-1”); and
 - (g) PRC-022-AB-1, *Under Voltage Load Shedding Program Performance* (“PRC-022-AB-1”).(collectively referred to as “retirement of existing reliability standards”); and
3. Not adopt NERC standard - PRC-024-2, *Generator Frequency and Voltage Protective Relay Settings* (“NERC PRC-024-2”)

The Alberta Electric System Operator (“AESO”) recommends that the Commission approve:

- (a) the adoption of proposed new reliability standards;
- (b) the retirement of existing reliability standards; and
- (c) to not adopt NERC PRC-024-2

pursuant to Section 19 of the *Transmission Regulation*.

Background

The AESO began developing reliability standards in a project that related to the adoption of final proposed new EOP-011-AB-1 for application in Alberta. As the development of those reliability standards progressed, the AESO identified additional reliability standards, as detailed below, that needed to be adopted and included in the project in order to completely retire some of the existing reliability standards related to final proposed new EOP-011-AB-1. In the course of development, the AESO also determined that certain provisions in proposed new EOP-011-AB-1 overlapped with Section 305.1 of the ISO rules, *Energy Emergency Alerts* (“Section 305.1”).

The AESO is also proposing to adopt proposed new PRC-006-AB-3. In the course of development, the AESO determined that certain provisions in final proposed new PRC-006-AB-3 would overlap with provisions in existing Operating Policy and Procedure OPP 804 *Off-Nominal Frequency Load Shedding and Restoration* (“OPP 804”).

For convenience, the AESO is referring to this overall initiative as the Emergency Operations Planning and Coordination Project (EOP&C Project). A diagram in Attachment 1 shows the related reliability standards and ISO rules in the EOP&C Project. A brief summary of the authoritative documents included in the EOP&C Project is articulated below.

EOP-011-AB-1 *Emergency Operations*

The AESO is proposing the adoption of EOP-011-AB-1 for application in Alberta resulting in the:

- complete retirement of existing EOP-001-AB1-2.1b;
- complete retirement of existing EOP-002-AB1-2;
- retirement of certain requirements that are related to manual load shedding in EOP-003-AB1-1; and
- amendments to Section 305.1 to remove duplicative content that is in EOP-011-AB-1. Specifically, subsections 2(a), (b), (c) and 3. Attachment 1 of NERC EOP-011-1 details the process and descriptions for energy emergency alert levels. The AESO currently details energy emergency alert levels and declarations in Section 305.1, which, if left in, would result in duplication of requirements.

PRC-006-AB-3 *Automatic Underfrequency Load Shedding*

The AESO is proposing the adoption of PRC-006-AB-3 for application in Alberta resulting in the:

- complete retirement of existing OPP 804;
- complete retirement of existing PRC-009-AB-0; and
- retirement of certain requirements that are related to automatic underfrequency load shedding in EOP-003-AB1-1.

PRC-010-AB-2 *Under Voltage Load Shedding*

The AESO is proposing the adoption of PRC-010-AB-2 for application in Alberta resulting in the:

- complete retirement of existing PRC-021-AB1-1;
- complete retirement of existing PRC-022-AB-1; and
- retirement of certain requirements that are related to automatic undervoltage load shedding in existing EOP-003-AB1-1.

NERC PRC-024-2 *Generator Frequency and Voltage Protective Relay Settings*

The AESO is currently proposing to not adopt NERC PRC-024-2. NERC PRC-024-2 requires the legal owner of a generating unit and legal owner of an aggregated generating facility to set their generator protective relays such that generating units and aggregated generating facilities remain connected during defined frequency and voltage excursions.

On March 20, 2020, the NERC filed a petition for approval of a proposed new version of reliability standard PRC-024¹ with the Federal Energy Regulatory Commission (“FERC”). The AESO has decided to not adopt NERC PRC-024-2 and to assess whether or not to adopt the next version of the reliability standard when it is approved by the FERC. The AESO is of the opinion that the following ISO rules and their associated information documents collectively and adequately cover the requirements of NERC PRC-024-2 at this time:

- Section 502.1, *Aggregated Generating Facilities Technical Requirements* (“Section 502.1”);
- Section 502.5, *Generating Unit Technical Requirements* (“Section 502.5”);
- Section 502.6, *Generating Unit Operating Requirements* (“Section 502.6”);
- Section 502.15, *Reporting Facility Modelling Data* (“Section 502.15”); and
- Section 502.16, *Aggregated Generating Facilities Operating Requirements* (“Section 502.16”)

¹ [Petition of the North American Electric Reliability Corporation for Approval of Proposed Reliability Standard PRC-024-3](#), March 20, 2020.

Specifically, the requirements are covered as follows:

Requirement R1

- requirement R1 is sufficiently covered for synchronous generating units by Section 502.5 subsection 9(2) and Appendix 3; and
- requirement R1, given the alternatives allowed in requirement R3, is sufficiently covered for aggregated generating facilities by Section 502.1 subsection 7(3) and Appendix 2.

Requirement R2

- requirement R2, given the alternatives allowed in requirement R3 for synchronous generating units is sufficiently covered by Section 502.5 subsections 6(3) and 7(3) and Appendices 1 and 2; and
- requirement R2, given the alternatives allowed in requirement R3 for aggregated generating facilities, is sufficiently covered by Section 502.1 subsection 5(2) and Appendix 1.

Requirement R3

- requirement R3, is sufficiently covered for generating units in Section 502.6 under subsections 3(2), 3(3) and 3(4), and for aggregated generating facilities in Section 502.16 under subsections 3(2), 3(3) and 3(4).

Requirement R4

- requirement R4, is sufficiently covered in Section 502.15 under subsection 2(2) and subsection 6. Where the legal owner must submit modelling data and records and where the AESO has the ability to request modelling data for existing facilities on an individual basis, respectively.

Summary of Proposed Changes

In developing the final proposed new reliability standards, the AESO determined that certain Alberta variances and administrative amendments were required in order to ensure that the NERC versions of EOP-011-1, PRC-006-3, PRC-010-2, and PRC-024-2, are capable of being applied in Alberta and do not require a material change in the framework for the market for electric energy. A summary of these Alberta variances and administrative amendments are as follows:

EOP-011-AB-1

Alberta variances:

- the NERC EOP-011-1 “Applicability” section has been redrafted to ensure the proposed new reliability standards are capable of application in Alberta;
- the AESO has removed “operator-controlled” in requirement R1.2.5 as it is redundant and it is clear in requirement R1 who the operator is;
- the AESO recommended not adopting requirement R2.2.5 which relates to a request to government agencies to implement their programs to achieve necessary energy reductions because no such programs exist in Alberta;
- the AESO recommended not adopting requirement R2.2.6 for reduction of internal utility energy use because the AESO has determined it is not an effective step in the supply shortfall procedure; and
- In Appendix 1 – Alert 0, the AESO changed the provision from notifying all reliability coordinators to notifying adjacent reliability coordinators as the AESO plans to use the Reliability Coordinator Information System (“RCIS”) to notify all reliability coordinators. However, if the AESO does not have access to RCIS, then the AESO will notify adjacent reliability coordinators through alternate methods selected by the AESO. In addition, the minimum notification requirements when declaring EEA1, EEA2 and EEA3 only require the AESO to notify adjacent reliability coordinators and not all reliability coordinators. Therefore, it is reasonable and consistent to do the same when declaring an Alert 0.

Administrative amendments:

- requirement R1 was amended to further clarify that it is only in the event of an operating emergency that the operating plan needs to be implemented;
- in requirement R1.2.2, the reference to “cancellation or recall of generating unit outages”, was deleted, as this is an AESO responsibility that is covered in Section 306.5 of the ISO rules, *Generation Outage Reporting and Coordination*;
- requirements R1A.2.1, R2, R2.2.1 and R5 are requirements that would require the AESO to notify itself or review its own operating plans. Since the AESO had multiple roles in that it performs the function as the reliability coordinator and the balancing authority, these requirements were not included. Further, in the case where the requirement was a standalone requirement, it was left as intentionally left blank;
- requirement R1A.2.4 was revised from re-dispatch of generation requests to align with terminology used in Alberta and, following consultation, was re-drafted to refer to provisions for issuing directives for generation;
- the AESO deleted the reference in requirement R1A.2.5 to issue directives “that are capable of being implemented in a timeframe adequate” for mitigating the emergency. This language is redundant in the context of how the AESO structures reliability directives to facility operators;
- the AESO deleted the reference in requirement R1A.2.5 relative to the coordination required to minimize the overlap with automatic load shedding as it is the responsibility of the operator of a transmission facility. This requirement is covered in R1.2.5;
- the AESO is the balancing authority and performs the function of a reliability coordinator in Alberta and as such there is no need for the AESO to be mandated to review its own operating plan as required in the NERC requirement R2. Consequently, the AESO removed a portion of requirement R2;
- the AESO is the balancing authority and performs the function of a reliability coordinator in Alberta and as such there is no need for the AESO to notify itself of conditions associated with a capacity emergency or an energy emergency as required in the NERC requirement R2.2.1. Consequently, these provisions were deleted from requirement R2.2.1 and it was left as “intentionally left blank”;
- with respect to requirement R2.2.8, the AESO directs the manual shedding of load and does not physically control the manual shedding of load that minimizes the overlap with automatic load shedding. Consequently, these provisions were deleted from requirement R2.2.8 and it was left as “intentionally left blank”; and
- the AESO deleted the reference in requirement R2.2.8 to issue directives “that are capable of being implemented in a timeframe adequate” for mitigating the emergency. This language is redundant in the context of how the AESO structures reliability directives to facility operators.

PRC-006-AB-3

Alberta variances:

- the NERC PRC-006-3 “Applicability” section has been redrafted to ensure the proposed new reliability standards are capable of application in Alberta;
- the AESO amended requirement RD.B.3 to reflect that the AESO does not control the development of the WECC underfrequency load shedding program and to allow for modification of the underfrequency load shedding program which addresses Alberta’s unique islanding characteristics;
- the AESO amended requirement RD.B.4 to reflect that the AESO does not control the simulation and documentation for the WECC underfrequency load shedding program but will participate in a coordinated underfrequency load shedding design assessment;
- requirement R7 was intentionally left blank as data required from other planning coordinators in the WECC that is necessary for modelling an underfrequency load shedding program is available through the WECC coordinated underfrequency load shedding program process;

- requirement R14 was intentionally left blank as there is no obligation on the AESO to consult on the underfrequency load shedding program. Therefore, there should not be any obligation to respond to entities' comments. Additionally, the AESO's underfrequency load shedding program is adopted from the WECC regional program with modifications for implementation in Alberta; and
- requirement R15 was intentionally left blank as the NERC requirements R3, R4, R5 and R12 referenced in R15 have been replaced by the WECC regional variances since the underfrequency load shedding design assessment in the WECC is conducted by the WECC underfrequency load shedding Review Group. Therefore, this requirement is not applicable for the AESO.

Administrative amendments:

- requirements R1, R2, R3, R4, R5, R11, R12 and R13, were left "intentionally left blank" as they are covered by a regional variance for the WECC;
- clarification on the specific WECC group that the AESO will participate in to meet its obligation in requirement RD.B.1; and
- in requirement RD.B.2, the AESO used "protection system" in place of "relay scheme" for clarity. The AESO has defined "protection system" in the [Consolidated Authoritative Document Glossary](#) ("CADG") which is better aligned with the term relay scheme.

Upon final review of the proposed new reliability standards, the AESO discovered a drafting error in proposed new PRC-006-AB-3, specifically, "(d) the ISO", was inadvertently omitted from the applicability section. The AESO has subsequently amended the applicability section of proposed new PRC-006-AB-3 to include "(d) the ISO".

PRC-010-AB-2

Alberta variances:

- the NERC PRC-010-2 "Applicability" section has been redrafted to ensure the proposed new reliability standards are capable of application in Alberta;
- requirement R1(b) was amended to allow the AESO to use its discretion when determining what factors to consider when performing the initial studies and analysis to assess the under voltage load shed program. The AESO will consider on a case-by-case basis any of the items listed as it determines necessary for the effectiveness of the under voltage load shed program; and
- requirement R3(b) was amended to allow the AESO to use its discretion when determining what factors to consider when performing the periodic studies and analysis to assess the under voltage load shed program. The AESO will consider on a case-by-case basis any of the items listed as it determines necessary for the effectiveness of the under voltage load shed program.

Administrative Changes

In addition to the above noted changes, the AESO made amendments to the proposed new reliability standards to ensure consistent use of defined terms as included in the AESO's CADG. The AESO has also made administrative changes, such as formatting and grammatical corrections. Some administrative changes, including the correction of typos, were made following consultation. All administrative changes made after consultation are reflected in the attached blacklines.

Summary of AESO Consultation

On February 27, 2020, the AESO posted a [Consultation Letter](#) on its website requesting written comments from market participants and other interested parties (“Stakeholders”) with respect to the proposed new, retirement of existing standards and to not adopt NERC PRC-024-2 and notified Stakeholders in the AESO Stakeholder Newsletter.²

On April 7, 2020, the AESO posted the one written comment received from a Stakeholder in response to the Consultation Letter on its website and notified Stakeholders in the AESO Stakeholder Newsletter. Please see the [Stakeholder Comments on Consultation Letter](#) for a summary of the written comment received.

On April 9, 2020, the AESO posted its reply to the one Stakeholder comment received, on its website and notified Stakeholders in the AESO Stakeholder Newsletter. Please see the [AESO Reply to Stakeholder Comments Letter](#) for a summary of the reply to the written comment received.

Related Applications to the Commission

On August 21, 2020, the AESO also filed two separate ISO rules applications with the Commission. The final proposed amended Section 305.1 and the final proposed removal of OPP 804 were developed in conjunction with the drafting of the proposed new, retirement of existing reliability standards, and to not adopt NERC PRC-024-2.

Proposed Effective Dates

The AESO recommends that the Commission approve the final proposed new and retirement of existing reliability standards to become effective on January 1, 2022 or such other later date as the Commission approves as an effective date for the EOP&C Project.

The AESO is recommending that the proposed not to adopt NERC PRC-024-2 become effective upon approval by the Commission.

The AESO submits that the final proposed new, retirement of existing standards and to not adopt NERC PRC-024-2 comply with the requirements of the *Transmission Regulation*, are not technically deficient, and are in the public interest.

Attachments to Forwarding Notice

The following documents are attached to this Forwarding Notice:

1. [February 27, 2020, Consultation Letter](#);
2. [April 7, 2020, Stakeholder Comments on Consultation Letter](#);
3. [April 9, 2020, AESO Reply to Stakeholder Comments Letter](#); and
4. [Blackline](#) and [clean](#) copy of final proposed new PRC-010-AB-2;
5. [Blackline](#) and [clean](#) copy of final proposed new PRC-006-AB-3;
6. [Blackline](#) and [clean](#) copy of final proposed new EOP-011-AB-1
7. [Copy](#) of existing EOP-001-AB1-2.1b;
8. [Copy](#) of existing EOP-002-AB1-2;
9. [Copy](#) of existing EOP-003-AB1-1;
10. [Copy](#) of existing PRC-009-AB-0;

² Section 19(4) of the *Transmission Regulation* states that, before adopting or making reliability standard, “the ISO must consult with those Market Participants that it considers are likely to be directly affected”.

11. [Copy](#) of existing PRC-010-AB-0;
12. [Copy](#) of existing PRC-021-AB1-1;
13. [Copy](#) of existing PRC-022-AB-1;
14. [Copy](#) of NERC PRC-024-2; and
15. [Copy](#) of EOP&C Project summary.

If you have any questions, please contact the undersigned.

Sincerely,

"Melissa Mitchell-Moisson"

Melissa Mitchell-Moisson
Regulatory Administrator
Email: ars_comments@aeso.ca

Attachments