

November 22, 2018

To: Market Surveillance Administrator, Market Participants and Other Interested Parties

Re: **Letter of Notice for Development of a Proposed New ISO Rule – Section 502.11, *Substation Technical and Operating Requirements* (“Section 502.11”)**

Pursuant to Section 4 of Alberta Utilities Commission Rule 017, *Procedures and Process for Development of ISO Rules and Filing of ISO Rules with the Alberta Utilities Commission*, the Alberta Electric System Operator (“AESO”) is providing notice and seeking feedback from the Market Surveillance Administrator, market participants, and other interested parties (“Stakeholders”) on the development of proposed new Section 502.11.

Applicability

The proposed new ISO rule Section 502.11 is applicable to:

- (a) the legal owner of a substation transmission facility with at least one rated voltage equal to or greater than 100 kV; and
- (b) the ISO.

Issue

While the Alberta Reliability Standards¹ require the AESO to establish connection and performance requirements for facilities connecting to the Alberta interconnected electric system, there are no ISO technical rules that specify the minimum technical requirements for the design, construction and operation of transmission substations that are directly connected to the Alberta transmission system. The AESO has determined that an ISO rule setting out minimum technical requirements for substations is required to ensure the reliable operation of the interconnected electric system under various operating conditions.

The major drivers for developing a new substation rule at this time are as follows:

- Transmission substations play a vital role in the reliable operation of the Alberta interconnected electric system. Substation configuration can have a far-reaching impact on the operation and maintenance flexibility of the transmission system. A technical rule will ensure that transmission substations are configured and designed to support the reliable operation of the Alberta interconnected electric system, while providing sufficient flexibility for future expansion.
- Transmission substations have traditionally accounted for a considerable portion of the cost of transmission projects, and this trend is expected to continue into the future. In the past, the AESO has found that the cost of transmission substation equipment was generally around 30% of the total cost of all some major connection and system projects. Setting out the technical requirements for substations in an ISO rule would allow for better management of connection costs by providing consistent equipment performance requirements and ratings.
- Differences between transmission facility owners in their substation design practices and policies have been observed by the AESO. Consistency across transmission facility owners would be beneficial. For example, station service supply systems play a vital role in any transmission

¹Specifically, FAC-001-AB-0, *Facility Connection Requirements*.

substation. Currently there is been no consistent minimum requirement for station service supply systems in Alberta.

- Currently, the AESO relies entirely on the functional specifications issued by the AESO to specify detailed transmission substation equipment requirements, on a project-by-project basis. A new rule would certainly reduce the level of detail in the functional specification.
- Pursuant to s.5 of the *Transmission Deficiency Regulation*, a market participant requesting system access service may, in certain circumstances, submit a proposal to the AESO for the construction and temporary operation of a transmission facility, which will ultimately be transferred to the incumbent transmission facility owner. A new rule would specify the relevant standards and minimum quantity and quality of equipment required for transmission substations to ensure consistent standards are applied by both the market participant requesting system access service and the incumbent transmission facility owner.

Objectives/Purpose

Proposed new Section 502.11 will define the minimum technical requirements for the design, construction and operation of transmission substations and will apply to only to new transmission substations or new equipment installed at existing transmission substations undergoing substantial modifications.

Consultation Completed to Date

In July 2015, an industry workgroup comprised of subject matter experts from the major transmission facility owners and distribution facility owners was formed. The workgroup met eight times between August 2015 and March 2016 to identify, prioritize and discuss the issues and possible solutions related to the minimum technical requirements for future transmission substations.

Members of the workgroup included representatives from the following organizations:

Company Type	Organization
ISO	AESO
TFO / DFO	AltaLink
	ATCO
	ENMAX Power
	EPCOR
	FortisAlberta

As noted in the September 18, 2015 *Substation Rule 502.11 Workgroup Terms of Reference*, meeting notes from these workgroups will not be posted on the AESO website.

On November 25, 2016, the AESO published on its website a Discussion Paper that proposed the minimum technical requirements for substations to be included in proposed new Section 502.11. These requirements were largely derived from the workgroup discussions between August 2015 and March 2016 and through subsequent communications with workgroup members. In particular, the Discussion Paper addressed the following key areas:

- need to classify substations into “general” and “major”, depending on their criticality;
- service conditions;
- grounding and insulation coordination;
- bus configuration;
- power transformers;
- station power supply systems;

- circuit breakers; and
- reactive power compensation devices.

The AESO asked market participants and other interested parties to provide comments on whether the proposed requirements in the Discussion Paper reflect the minimum technical requirements for transmission projects involving new or modified transmission substations.

In mid-January 2017, the AESO received written comments on the Discussion Paper from AltaLink Management Ltd., ATCO Electric Ltd., Capital Power Corporation, EPCOR Distribution & Transmission Inc., and Suncor Energy Inc. The AESO held discussions with parties who commented on the Discussion Paper to clarify its understanding of the comments received.

Proposed Consultation and Timeline

The AESO is of the view that it has met the intention of sections 6.1 and 6.2 of AUC Rule 017 as a result of the consultation completed to date. Therefore, the AESO is proposing to move directly to issuing draft versions of the proposed New and Amended ISO Rules and soliciting comments pursuant to section 6.3 of AUC Rule 017.

While stakeholders have had the opportunity to provide comment on whether a proposed ISO rule is needed, and on the information required in subsection 7.2(b) - 7.2(j) of AUC Rule 017 as part of the consultation completed to date, the AESO intends to provide stakeholders with the additional opportunity to provide comment on these matters in the matrices it issues pursuant to section 6.3 of AUC Rule 017.

The AESO proposes the following timeline for consultation:

- 1) December 11, 2018 - Post Stakeholder comments received on this Letter of Notice for Development of the proposed New ISO Rule Section 502.11;
- 2) January 3 2018 - Post draft of the proposed New ISO Rule Section 502.11 for written comment;
- 3) January 18, 2019 - Deadline for submitting written comments proposed New ISO Rules 502.11;
- 4) February 4, 2019 - Post all written comments and provide written responses to the comments; and

Stakeholder Comments

Stakeholders may submit:

- (i) written comments;
- (ii) a notice of intent to participate in consultation; and
- (iii) comments on the form of consultation;

The AESO has posted, on the [AESO website](#), any data, analyses, or other material that the AESO considers to be relevant to the development of the proposed new ISO rule Section 502.11.

Please use the *Stakeholder Comment Matrix – Development of Proposed ISO Rule* when submitting comments to the AESO. Stakeholders should ensure that comments provided represent all interests within their organization.

The deadline for Stakeholders to provide comments is December 7, 2018 to rules_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 publish all Stakeholder comments, received by the deadline, on the AESO website on December 11, 2018.

If no comments are received by the AESO regarding the proposed new ISO rule Section 502.11, the AESO will post the proposed new and amended ISO rules for written consultation.

Related Materials

1. [Stakeholder Comment Matrix – Development of Proposed ISO Rule for the proposed new ISO rule Section 502.11, and](#)
2. [AESO Discussion Paper Regarding the Proposed New Substation Rule - Section 502.11](#)
3. [Substation Rule 502.11 Workgroup Terms of Reference](#)

Sincerely,

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