

Purpose

The purpose of this document is to provide market participants with a summary clarifying the AESO's criteria for the initiation of system transmission projects ("System Criteria"), as well as to provide background and context regarding the relevant legislative framework. This document is intended to serve as an informational resource only and is not authoritative. This document does not propose any changes to the AESO's current practices, approaches, or processes.

Background and Context

ISO Tariff Compliance Filing

On September 22, 2019, the Alberta Utilities Commission ("**Commission**") issued Decision 22942- D02-2019¹ ("**Decision**") regarding the AESO's 2018 comprehensive ISO tariff application.

In the Decision, the Commission directed the AESO:

"... to work with the DFOs to develop an objective set of criteria for the initiation of system transmission projects reflecting the Commission's findings in [the Decision]"²

("Direction 13")

and

"to provide a report on the status of such discussions, including a discussion of any criteria the AESO would propose for determining "grey area" system projects at the time of its next comprehensive GTA"³

("Direction 14").

On November 30, 2021, the AESO submitted a compliance filing and report seeking the Commission's confirmation that the AESO had satisfactorily responded to Directions 13 and 14. On December 13, 2021 the Commission issued Decision 27015-D01-2021, approving the AESO's application as filed. The Commission ruled that no further actions with respect to Direction 13 and 14 would be required by the Commission in a future update to the ISO tariff.

Relevant Legislative Framework

The AESO is responsible under the *Electric Utilities Act* ("**Act**") for (i) planning and making arrangements for Alberta's transmission system so that it meets the current and future needs of electricity market participants,⁴ and (ii) providing market participants with system access service on the transmission system in a manner that gives all market participants wishing to exchange energy and ancillary services a

¹ AUC Decision 22942-D02-2019, *Alberta Electric System Operator, 2018 Independent System Operator Tariff* (September 22, 2019).

² Decision para. 607, PDF 146.

³ Decision para. 608, PDF 146.

⁴ Sections 17(i)-(j) of the Act.

reasonable opportunity to do so.⁵ These duties are reflected in the different types of transmission projects that the AESO may be required to initiate in accordance with section 34 of the Act, which distinguishes broadly between two types of transmission projects:

- “system projects” (also referred to as “system transmission projects”),⁶ being transmission projects that the AESO may initiate *in response to an AESO-identified need* to expand or enhance the capability of the transmission system, in accordance with sections 34(1)(a) and (b). For these types of projects, a “system needs identification document” or “system NID” is generally required to be filed by the AESO for review and approval by the Commission; and
- “connection projects”,⁷ being transmission projects that the AESO initiates *in response to a request for new or modified system access service (“SASR”)* that is received from a market participant in accordance with section 34(c). For these types of projects, a “connection needs identification document” or “connection NID”⁸ is generally required to be filed by the AESO for review and approval by the Commission.

Notwithstanding the distinction between “system projects” and “connection projects”, it is important to note that, for purposes of regulatory efficiency, the AESO may include an AESO-initiated system project as a “system-related” component of a connection NID that is filed for approval with the Commission.

The costs associated with a system project (or system-related component of a connection project) that has been initiated by the AESO are incurred for the benefit of the interconnected electric system and are recovered from all load ratepayers in accordance with the ISO tariff.

Conversely, for connection projects, the AESO is required under the ISO tariff to classify transmission facility costs as either:

- “participant-related”, which is appropriate for transmission facility costs that are incurred solely as a result of a SASR that has been submitted by a market participant and solely for the purpose of providing system access service to the market participant. Costs that have been classified as participant-related under the ISO tariff are paid through a combination of an up-front contribution payment required from the market participant that submitted the SASR, and investment by the transmission facility owner that is recovered over time from load ratepayers under Rate DTS of the ISO tariff, *Demand Transmission Service*; or
- “system-related”, which is appropriate for transmission facility costs that, like system project costs, are incurred as a result of an AESO-identified need to expand or enhance the capability of the transmission system, and which have been included, for purposes of regulatory efficiency, as a component of a connection project. Like the costs of system projects, the system-related costs of a connection project are recovered from load customers under Rate DTS of the ISO tariff, *Demand Transmission Service*.

⁵ Section 29 of the Act.

⁶ Pursuant to sections 34(1)(a) and (b) of the Act.

⁷ Pursuant to section 34(1)(c) of the Act.

⁸ Connection NIDs are generally filed as “abbreviated needs identification documents” (ANIDs) in accordance with the eligibility criteria established in AUC Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines*.

AESO's System Criteria

AESO's Application of the System Criteria

The AESO applies the System Criteria on a case-by-case basis. *Appendix A* provides hypothetical illustrative examples of the AESO's application of the System Criteria.

The AESO relies upon the System Criteria to determine whether (i) to initiate a system project, or (ii) to classify the costs of a connection project as participant- or system-related in accordance with the terms and conditions of the ISO tariff.

System Criteria #1 – Reliability Criteria Violations and Congestion-Free Requirements

Section 15 of the *Transmission Regulation* (“**T-Reg**”) requires the AESO to plan a transmission system that satisfies Alberta reliability standards, to ensure that transmission facilities adhere to Alberta reliability standards, and to monitor and ensure the overall reliability of the interconnected electric system.⁹ Section 15 of the T-Reg also requires the AESO to plan a system that is substantially free of congestion.¹⁰

Consequently, when the AESO observes a forecast violation within the AESO's 20-year planning horizon (on the basis of planning studies that rely on forecasts and reasonable assumptions) of either (i) the AESO's reliability criteria, which are derived from Alberta reliability standards (“**Reliability Criteria**”), or (ii) the congestion-free performance standards that the AESO is required to meet under section 15 of the T-Reg, the AESO will develop a plan to mitigate these violations.

Typically, observed forecast violations are first identified by the AESO in the long-term transmission system plans that the AESO is required to develop.¹¹ These violations are then prioritized to determine when a system project (for which a system NID is generally required) should be initiated, and to further confirm and study any expansion or enhancement of the transmission system that may be required.

System Criteria #2 – Optimizing with End-of-Life Facilities in the Vicinity of an AESO-identified System Need

Transmission facility owners (“**TFOs**”) are responsible for determining when the transmission facilities that they own and operate are nearing end-of-life. When an asset is nearing end-of-life, a TFO has the option of moving forward with a like-for-like replacement (*i.e.*, maintaining the existing configuration) or, subject to confirmation from the AESO, proceeding with a system reconfiguration that would increase transmission system efficiency.

When a TFO determines that a transmission facility (such as a cable, substation, transformer, or breaker) is nearing end-of-life, the TFO informs the AESO so that the AESO can assess the overall need for transmission system expansion or enhancement within the region as an alternative to a like-for-like replacement. In this situation, the TFO is required to describe the deteriorating asset condition to the AESO and the required timing for replacement of the transmission facility. The timing of when a transmission

⁹ Sections 15(1)(a)-(c) of the T-Reg.

¹⁰ Sections 15(1)(e)-(f) of the T-Reg.

¹¹ Sections 33 of the Act and Section 10(1)(a) of the T-Reg.

facility reaches end-of-life must reasonably coincide with the timing of a system need or construction timelines of transmission developments already associated with a system project.

If the AESO determines that a system reconfiguration would provide greater system benefit than a like-for-like replacement, a system project would be initiated at the appropriate time.

During the preparation of the system project, the TFO would work with the AESO to identify avoided asset lifecycle replacement costs so that the Commission can be made aware of the replacement costs avoided as a result of the system project.

Certain preconditions must exist in order for a system project to be initiated by the AESO as a result of System Criteria #2:

- The level of service or reliability provided to existing market participants must not be negatively impacted.
- The system reconfiguration must provide a measurable transmission system benefit, which may include the following:
 - The system reconfiguration is a lower-cost option than a like-for-like asset replacement.
 - The reduction of environmental and land use effects in the area, compared to a like-for-like asset replacement.
 - The reduction or mitigation of a system need that already exists or is forecast to exist in the area.

The AESO is committed to exploring further opportunities for coordination between the AESO and TFOs, to ensure that future opportunities to optimize the transmission system when transmission facilities are nearing end-of-life can be realized.

System Criteria #3 – Optimizing the Interconnected Electric System for Greater Efficiency

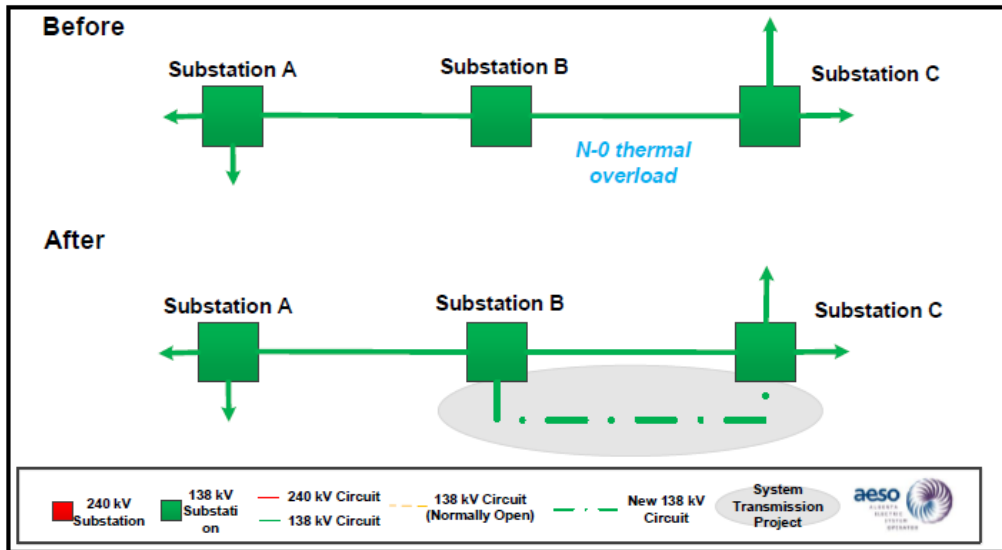
System Criteria #3 is intended to address circumstances where the AESO determines that an expansion or enhancement of transmission system capability would result in the more efficient operation of the interconnected electric system (even in the absence of observed Reliability Criteria violations). In such cases, efficiency, including but not limited to lower overall cost and improved system performance for the benefit of all ratepayers, would be used to demonstrate the benefits of an enhancement or expansion of transmission system capability, and to justify the recovery of project costs from all load ratepayers under the ISO tariff.

Clarification regarding Opportunities for Coordinated Connection Facilities

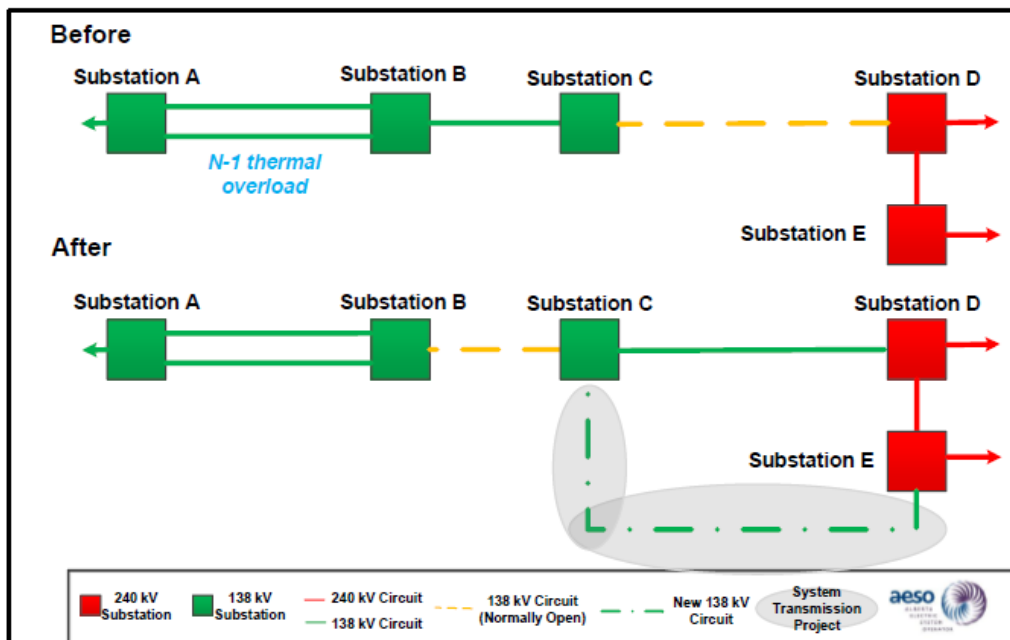
When the AESO receives SASRs from multiple market participants in the same vicinity that has high growth potential, there is an opportunity for the AESO to investigate the benefits of coordinated connection facilities versus a multitude of individual connection developments. Hypothetical examples include the development of a new collector system or a higher-voltage connection solution to accommodate multiple SASRs in a given area more efficiently. For greater clarity, these developments would be considered connection projects and the System Criteria would not apply. In order for the AESO to consider such opportunities for coordinated connection facilities, the AESO must reasonably consider the coordinated transmission development to be a better overall solution than the individual connection solutions. As previously discussed, the AESO would classify the costs as participant-related or system-related in accordance with the ISO tariff.

Appendix A – Hypothetical Examples of AESO System Criteria

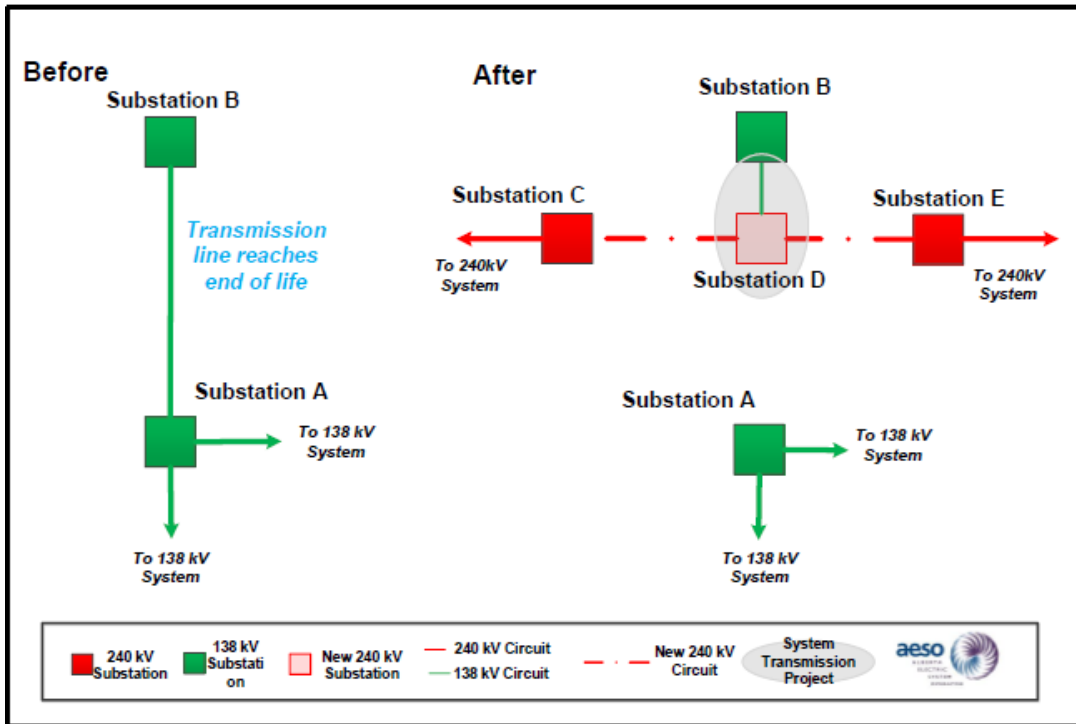
System Criteria #1 Example: Addressing generation driven reliability/congestion violation for N-0 overload



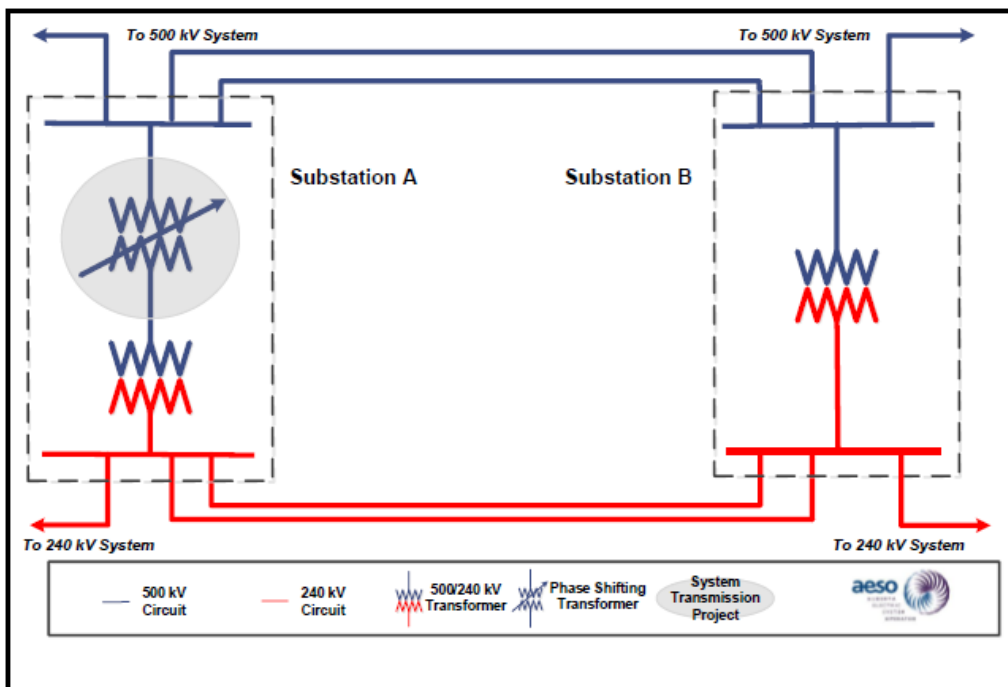
System Criteria #1 Example: Addressing load driven N-1 reliability violation due to overloads



System Criteria #2 Example: Coordinating system development with asset end of life



System Criteria #3 Example: Optimizing system using a phase shifting transformer



Example of coordinated connection facilities

