

# Development of Proposed New Substation Rule

Stakeholder Consultation Session

March 18, 2019

# Fire safety: AESO building evacuation procedures

## Calgary Place

### Slow alarm:

- Stand by
- Listen to announcements

### Fast alarm:

- Evacuate to muster point

### Muster point:

- Courtyard at 5<sup>th</sup> Ave Place

## BP Centre

### Slow alarm:

- Stand by
- Listen to announcements

### Fast alarm:

- Evacuate to muster point

### Muster point *South*:

- Courtyard at 5<sup>th</sup> Ave Place

### Muster point *West*:

- Courtyard by Chinese Cultural Center

## SCC

### When alarm sounds:

- Proceed to Guard House
- Wait for further instruction  
*(From your fire captain or fire department)*



# Stakeholder Consultation Session Expectations

- One speaker at a time – avoid side discussions
- Raise your hand to speak
- To help the minute takers, please state your name and company, prior to asking questions or making comments
- Discussion will follow the present of each section

# Agenda

Time	Item
10:00 – 10:15	Rule Development Consultation Process Overview
10:15 – 10:45	Current Practice and Proposed New Substation Rule Overview
10:45 – 11:00	Coffee Break
11:00 – 12:00	Review of Feedback Received
12:00 – 1:00	Lunch
1:00 – 3:00	Review of Feedback Received

# ISO Rule Development Process



- Section 20 of the *Electric Utilities Act* grants authority to the AESO to develop ISO rules.
- AUC Rule 017, *Procedures and Process for Development of ISO Rules and Filing of ISO Rules with the Alberta Utilities Commission*, sets out the requirements for the development of ISO rules including:
  - stakeholder engagement requirements; and
  - AUC application requirements.

# ISO Rule Development

## Current AESO Practice – AUC Rule 017



The AESO will:

- issue a notice inviting stakeholders to participate in consultation after the AESO determines that a new rule or an amendment to an existing rule may be required;
- establish a consultation group for the rule development;
- consult with the consultation group on the need for a rule and the development of the proposed rule;
- solicit written stakeholder comments regarding the proposed rule;
- post and respond to all stakeholder comments within 15 days of receiving comments; and
- File the final proposed rule with the AUC.

# ISO Rule Development Past AESO Practice

In the past, the AESO would:

- ✓ determine that a new rule or an amendment to an existing rule was needed;
- ✓ form a working group, if required, primarily made up of technical experts from impacted organizations;
- ✓ work with the working group to draft the proposed rule;
- ✓ prepare a discussion paper or study report, when deemed necessary, to assist in drafting the proposed rule;
- post the proposed rule and solicit written feedback from stakeholders; and
- file the final proposed rule with the AUC.



# New Substation Rule Development AUC Rule 017 Process

**WE ARE HERE**

Establish a  
consultation group

AESO consults with  
the consultation  
group on the  
development of the  
proposed new rule

AESO develops the  
proposed new rule  
considering input  
from the  
consultation group

AESO posts the  
proposed new rule  
on the AESO  
website and solicits  
stakeholder  
comments

Stakeholders  
provide written  
comments by a  
specified date

Within **15** days of  
the specified date,  
the AESO posts  
stakeholder  
comments and  
responses

AESO amends the  
proposed new rule  
considering  
stakeholder  
comments

AESO files an  
application with the  
AUC requesting  
approval of the final  
proposed rule

**AUC proceeding  
begins**

# Expectations of Participants

- Actively participate – this is your session to provide feedback
- Your positions are not binding, but provide your input in good faith so we can work together to address the issues
- Engage in respectful and meaningful dialogue

- Meeting minutes will be taken by AESO employees
- Draft meeting minutes will be circulated for review and ultimately posted to the AESO website
- Company names will be used to identify contributions

# Questions or Comments



# Substation Technical Requirements

## Current Practice

- Some substation technical & operating requirements are currently determined on a project-by-project basis by the AESO and outlined in the AESO project functional specification.
- Technical & operating requirements that are not defined by the AESO in the project functional specification are left to the legal owners of transmission facilities (TFOs) to specify.
  - TFOs each have their own practices.
- In addition, substations are subject to the following, as applicable: Alberta Reliability Standards, codes, regulations, and industry standards (i.e., IEEE, CSA).

# Objective/Purpose of the New Substation Rule

- To define a consistent set of minimum technical requirements, regardless of substation ownership, for the design, construction and operation of:
  - future new substations; or
  - modifications and upgrades to existing substations.

# Rationale of the Proposed New Substation Rule

- Reduce the inconsistencies of technical specifications between projects:
  - Currently there is the potential for substation technical requirements to differ between TFOs.
  - Currently the AESO relies on TFO standards to address certain technical requirements. New market participants may have different practices.
- Reduce the need for project-specific substation technical requirements in the AESO project functional specifications:
  - Improve clarity for TFOs, market participants, the AESO, and other stakeholders regarding substation technical requirements.
  - Reduce time needed to develop and review AESO project functional specifications.

# Scope of the Proposed New Substation Rule

- Minimum technical requirements are intended to be:
  - Reliability requirements
  - Functional requirements
- Major substation equipment with voltages  $\geq 100$  kV (with some exceptions) including:
  - Transformers
  - Bus configuration
  - Switching devices
  - Station service systems



# Out of Scope of the Proposed New Substation Rule

- Minimum technical requirements will not include:
  - Detailed design specification
  - Requirements covered through the Alberta Reliability Standards, other ISO rules, or legislation/regulation

# Feedback on Scope, Rationale, and Impact of Proposed Substation Rule?



# Stakeholder Comments Review



# Overview of Comments Received

- AltaLink Management Ltd.:
  - Agrees with the development of the proposed new rule.
  - Suggests the deadline for submitting written comments on proposed new substation rule be at least 4 weeks.
- Consumers' Coalition of Alberta (CCA):
  - A number of questions, comments, and recommendations were received, which will be discussed in the following slides.
- ENMAX Power Corporation:
  - Agrees with the development of the proposed new rule.
- EPCOR Distribution & Transmission Inc.:
  - Agrees with the development of the proposed new rule.

# CCA Supplemental Comments

## Section 25 (a)

- What is the justification for the decision to create a Type 1 substation category, including the reliability and economic analysis?
- What is the criteria that should be applied to determine if a substation is a Type 1?
- Are there other classifications of substations that might be more useful?

# CCA Supplemental Comments

## Section 25 (b)

- What is the degree of provision for future lines or transformers in the current design (from only purchasing additional land through to construction of a double breaker layout)?

# CCA Supplemental Comments

## Section 25 (c)

- What is the basis for moving away from SAIDI, SAIFI and CAIDI and will the proposed replacement result in a more optimal trade-off between reliability and cost?

# CCA Supplemental Comments

## Section 25 (d)

- What should be the basis for substation replacement or refurbishment to be undertaken?



# CCA Supplemental Comments

## Section 25 (e)

- What service conditions, informed by temperature and other studies, need to be addressed in substation design?

# CCA Supplemental Comments

## Section 25 (f)

- What are the requirements to safely and cost-effectively salvage substations?

# CCA Supplemental Comments

## Section 25 (g)

- How are telecommunications facilities integrated into substations?

# CCA Supplemental Comments

## Section 25 (h)

- What considerations (if any) relative to environmental contamination need to be included in the proposed rule?

# CCA Supplemental Comments

## Section 25 (i)

- What role does equipment life and condition assessments play in equipment replacement, substation refurbishment and substation salvage/replacement?

# CCA Supplemental Comments

## Section 25 (j)

- What consideration has been given to short-term equipment and overload capabilities in minimizing design costs?

# CCA Supplemental Comments

## Section 25 (k)

- What is the basis for buswork spacing and spacing requirements for maintenance?

# CCA Supplemental Comments

## Section 25 (I)

- What are the design practices and parameters for containment design (e.g. for transformers)?



- “...the CCA would like the AESO to identify all material changes to prior substation designs, with the reasons for the change specified and a cost-benefit analysis undertaken to demonstrate the change is justified and is in the public interest. The extent of the cost-benefit analysis should be a function of the degree of impact of the design change or new standard on cost and reliability.”

- “The CCA urges the AESO to obtain an independent third-party review of the proposed section 502.11 rule.”

- “...one way to obtain input from other stakeholders would be conduct a Technical Session on the proposed rule.”

- “...the CCA recommends that all working papers, cost-benefit analysis and meeting minutes be posted to the AESO website.”

# Any Additional Comments or Questions?



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**Thank You**