ISO Rule Section 502.11 (Substation) Workgroup meeting minutes - Final

Date: August 27, 2015
Time: 9:30 am – 12:30 pm
Location: 2539P Meeting Room, AESO Office

Attended	Name	Company
X	[redacted]	AESO
X	[redacted]	AESO
X	[redacted]	AESO
X	[redacted]	AESO
X	[redacted]	Altalink
	[redacted]	Altalink
X	[redacted]	ATCO Electric
	[redacted]	ATCO Electric
	[redacted]	Epcor
	[redacted]	Epcor
X	[redacted]	Enmax
X	[redacted]	Enmax
X	[redacted]	Transalta

1. Welcome and introduction – [AESO]

[AESO] welcomed all attendees to the first meeting. [AESO] mentioned that this substation rule is not and should not be a "how-to" manual. The substation rule only addresses the minimum technical requirements and more importantly, the rule applies projects on a prospective basis. An ID document may be created to include supplementary information and further clarifications. Minutes of the meeting will be prepared and circulated, but not posted on the AESO website.

2. Presentation on the purposes and deliverables of the workgroup – [AESO] presented a slide show for the following items:

- Why do we need a substation rule?
- The purposes and deliverables of the workgroup (WG)
- Roles and responsibilities of WG members
- Proposed meeting schedule

A question was raised as to if the recommendation paper will be posted on the AESO website. The AESO replied that the recommendation paper will be posted on the AESO website to obtain a broader feedback.

Attendees agreed to meet monthly. The following meeting dates were agreed:
- Sept 17th at ATCO
- Oct 29th at ENMAX
- Nov 19th at EPCOR
- Dec 17th at AltaLink

- Jan 21st at AESO

3. Presentation on what to be included in the rule and the WG draft T of R – [AESO] presented a slide show for the following items:

- What will be included in the substation Rule 502.11?
- Workgroup Terms of Reference

The following questions were raised and discussed at the meeting:

- Applicability of the rule: WG discussed whether ISD (Industrial System Designation) owned substations should be included in the rule.
  - TransAlta – Inclusion of other subs the TFO substations should be based on the impact of the substation on the system. A radial connected substation is likely to have less impact on the system than a loop-connected substation.

- Should customer owned substations, 69/72 kV and HVDC substations be included? The AESO mentioned that another HVDC line will not likely be built for a long time so probably shouldn't be included. 69/72 kV substations may need to be included to address future upgrades/rebuild.
  - WG – Agreed that further discussions on this should take place in future meetings.

- Should we define a Major Substation? A Major Substation may have extra requirements to other ones because of their criticality.
  - AESO – 40 to 50 substations (out of the current 700 substations) would qualify for the criteria if we create a Major Substation category.
  - ATCO – Some critical substations go on a higher level of planning by nature anyways, often going beyond the 502.2 rule.
  - Altalink – Critical substations may have different minimum requirements but the functional spec are still the same.
  - TransAlta – The definition should be based on the number of circuits.
  - WG – Agreed that this will be further discussed in future meetings.

- Life Expectancy of equipment
  - WG – Agreed that no life expectancy for equipment should be specified.

- Reliability & availability
  - ATCO – Substations are an integral part of the system so there should be requirement for the minimum reliability and availability.

- Safety
  - Altalink – There is no need to include the safety rules (OH&S and AEUC codes) unless we have something over and above them.
  - AESO – Should they be included in an ID which is more of an FYI document?

- Insulation Coordination and Grounding – BIL and BSL levels
  - ATCO – Insulation levels should be specified because they are related to not only reliability but also cost.

- AESO – Wording may need to be changed to say that insulation test must be done.

- Station power supply & control building
  - ATCO – Critical substations need standby power for station service.
  - AltaLink – Station service specifications are more based on what the needs are, the number and type of equipment at the substations.

- Major Equipment – Circuit breakers
  - AltaLink – Protection rule 502.3 has specified maximum relay operating time for all transmission facilities above 100 kV. In 502.11, maximum breaker operating time should be specified for all transmission facilities above 100 kV.
  - Transalta – Does the AESO mandatorily require GIS? AESO – No.
  - WG – Agreed that breaker operating time should be specified in the rule.
  - WG – Agreed maintenance requirements of circuit breakers should not be included. PRC standards require it anyways. We shouldn't duplicate anything.

- Major Equipment – Power transformers
  - ATCO – We need to recognize different operating voltages in different parts of the province. NERC FAC-008 is about facility ratings, and has a WG on substation ratings that we should coordinate with.

- Bus Design & other station equipment
  - TransAlta – For physical security requirement, CIP reliability standard would cover it. We don't need to address this unless there are additional requirements to CIP.

- WG draft Terms of Reference – Ligong presented the draft Terms of Reference to WG members and asked for comments and feedback from WG members.

  AltaLink raised the following points:
  - What is to be included in the recommendation paper? The T of R needs to provide more information of what goes to the recommendation paper.
  - In the rule, we should limit the exceptions as much as we can. The rule should be clear on the requirements without providing excessive flexibility.
  - We may need to consider external consultants for economic comparisons of technologies.

ACTION ITEMS

- AESO to provide detailed spreadsheet with all the issues and send to WG one week in advance so everyone can be better prepared and discuss internally.

- WG to send comments on the draft Terms of Reference to the AESO by September 4.

Meeting adjourned at 12:30 pm.

NEXT MEETING

- September 17, 2015 at ATCO from 10:00 am to 3:00 pm