



Date of Request for Comment: <u>January 10, 2019</u> Period of Comment: <u>January 10, 2019</u> through <u>January 31, 2019</u> Comments From: <u>AltaLink</u> Date [yyyy/mm/dd]: <u>January 31, 2019</u>	Contact: <u>Jenette Yearsley</u> Phone: <u>(403) 387-8275</u> Email: <u>Jenette.Yearsley@AltaLink.ca</u>
--	--

Listed below is the summary description of changes for the proposed new PRC-025-AB-2. Please refer back to the Consultation Letter under the “Attachments” section to view materials related to the proposed new PRC-025-AB-2. Please place your comments/reasons for position underneath (if any).

Alberta Reliability Standard	Market Participant Comments and/or Alternative Proposal
<p>New</p> <p>The AESO is seeking comments from market participants with regard to the following matters:</p> <ol style="list-style-type: none"> Are there any requirements contained in proposed new PRC-025-AB-2 that are not clearly articulated? If yes, please indicate the specific section of proposed new PRC-025-AB-2, describe the concern and suggest alternative language. Please provide any additional comments regarding proposed PRC-025-AB-2. 	<p>Comment # 1:</p> <p>2. Applicability:</p> <p>In section 2 – Applicability, the “Inclusions” part applies to legal owners, however, the “Exclusions” part applies to protection systems. The two lists are not comparable. AltaLink suggests the “Applicability” section include “Functional Entities” and “Facilities” as in NERC PRC-025, since it is more clear on the applicability of this standard to TFOs; and the “Exclusions” part be moved from “Applicability” section to an Appendix, as Appendix 1 in PRC-023-AB-4.</p> <p>Comment # 2:</p> <p>2.1 Inclusions (c) the legal owner of a transmission facility that is: (i) part of the bulk electric system;</p> <p>It is AltaLink’s understanding that BES definition is under review to exclude the radial circuits that are only used to export energy directly from a generating unit or aggregated generating facility to a single system element on the networked transmission system. Using the proposed BES definition to define the scope of PRC-025-AB-2 will exclude the above mentioned radial circuits, which AltaLink does not believe is the intent of this standard.</p> <p>For section 2.1 (c) (i), AltaLink suggests using language such as: “system elements that are part of a radial circuit, including transmission step-up</p>

	<p>transformers and lines, that are only used to export energy directly from a generating unit or aggregated generating facility to a single system element on the networked transmission system.”</p> <p>Comment # 3:</p> <p>2.1 Inclusions</p> <p>(c) the legal owner of a transmission facility that is:</p> <p>(ii) which the ISO determines is necessary for the reliable operation of either the interconnected electric system or the City of Medicine Hat electric system and publishes on the AESO website and may amend from time to time on notice to market participants in accordance with the process set out in Appendix 1.</p> <p>For section 2.1 (c) (ii), AltaLink suggests AESO to provide, in an appendix, a list of all transmission facilities that are in the scope of PRC-025. This would help to clarify which transmission facilities are in the scope of PRC-025.</p>
--	---

Comment # 4:

Table 1. Relay Loadability Evaluation Criteria					
Application	Relay Type	Option	Bus Voltage ¹	Pickup Setting Criteria	
Relays installed on the high side of the transmission step-up transformer ⁸ including relays installed on the remote end of the line for system elements that connect any transmission step-up transformers to the transmission system that are used to export energy from a generating unit, aggregated generating facility, or generating plant – connected to synchronous generators.	Phase distance relay (e.g. 21) – directional toward the transmission system	14a	0.85 per unit of the line nominal voltage at the relay location.	The impedance element must be set less than the calculated impedance derived from 115% of: (1) Real power output – 100% of the aggregate maximum authorized real power , and (2) Reactive power output – 120% of the aggregate generation real power value, derived from the generator nameplate apparent power rating at rated power factor .	
		OR			
		14b	Simulated line voltage at the relay location coincident with the highest reactive power output achieved during field-forcing in response to a 0.85 per unit of the line nominal voltage at the remote end of the line prior to field-forcing.	The impedance element must be set less than the calculated impedance derived from 115% of: (1) Real power output – 100% of the aggregated maximum authorized real power , and (2) Reactive power output – 100% of the aggregate generation maximum gross reactive power output during field-forcing as determined by simulation.	
The same application continues on the next page with a different relay type					

For Table 1 option 14a (shown above) - 16b, how can market participants acquire the following data in order to determine the Pickup Settings: the aggregate maximum authorized real power; the generator nameplate MVA rating at rated power factor; maximum gross Mvar output during field-forcing as determined by simulation.

Comment # 5:

Table 1. Relay Loadability Evaluation Criteria				
Application	Relay Type	Option	Bus Voltage ¹	Pickup Setting Criteria
Relays installed on the high-side of the transmission step up transformer ¹¹ including relays installed at the remote end of the line for system elements that connect the transmission step-up transformers to the transmission system that are used to export energy from a power plant, asynchronous generating units or aggregated generating facility comprised of asynchronous generating units including inverter-based installations.	Phase distance relay (e.g. 21) – directional toward the transmission system	17	1.0 per unit of the line nominal voltage at the relay location	The impedance element must be set less than the calculated impedance derived from 130% of the maximum aggregate nameplate apparent power output at rated power factor (including the reactive power output of any static or dynamic reactive power devices).
	The same application continues on the next page with a different relay type			

For Table 1 option 17 (shown above) - 19, how can market participants acquire the maximum aggregate nameplate MVA output at rated power factor (including the Mvar output of any static or dynamic reactive power devices) that is necessary to determine the Pickup Settings?

Comment # 6:

Please provide the implementation plan of this standard.