

Stakeholder Comment Matrix – July 23, 2019

Consultation on Proposed new and amended ARS related definitions



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| Date of Request for Comment: <u>July 23, 2019</u> Period of Consultation: <u>July 23, 2019</u> through <u>August 6, 2019</u> Comments From: <u>ATCO Electric</u> Date [yyyy/mm/dd]: <u>2019/08/01</u> | Contact: <u>Alain Duguay</u> Phone: <u>587-372-1595</u> Email: <u>Alain.duguay@atco.com</u> |
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Listed below is the summary description of changes for the proposed new and amended ARS related definitions. Please refer back to the Consultation Letter under the “Attachments” section to view materials related to the proposed new and amended ARS related definitions. Please place your comments/reasons for position underneath (if any).

| Definitions – New | | |
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| Existing | Proposed | Stakeholder Comments and/or Alternate Proposal |
| No definition currently exists for use in the Alberta reliability standards | <p>“radial circuit” means an arrangement of contiguous system elements energized at 50 kV or higher that:</p> <ul style="list-style-type: none"> (a) extend from a system element on the networked transmission system in a linear or branching configuration; (b) connect to one or more of a load facility, a generating unit, or an aggregated generating facility; and (c) comprise the only circuit by which power can flow between the networked transmission system and the facilities | |

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| | <p>identified in item (b) under normal operating conditions, and includes an arrangement where the circuit energized at 50 kV or higher is connected to another circuit energized at 50 kV or higher, either through a switching device that is operated normally open or through facilities energized at less than 50 kV where the circuit would be a radial circuit if the connection did not exist.</p> | | |
| No definition currently exists for use in the Alberta reliability standards | <p>“system access service” as defined in the Act means the service obtained by market participants through a connection to the transmission system, and includes access to exchange electric energy and ancillary services.</p> | | |
| Definitions – Amended | | | |
| Existing | Proposed | Blackline of Existing and Proposed | Stakeholder Comments and/or Alternate Proposal |
| <p>“bulk electric system” as defined by the Regional Reliability Organization, means the electrical generation resources, transmission lines, interconnections, with neighbouring systems, and associated equipment, generally operated at voltages of one hundred (100) kV or higher; radial transmission facilities serving only load with one</p> | <p>“bulk electric system” means all system elements that are included in the following:</p> <ul style="list-style-type: none"> (i) all system elements that have all terminals energized at 100 kV or higher that are not part of a radial circuit; (ii) a radial circuit comprised of system elements that have all terminals energized at 100 kV or higher where the radial circuit connects to: <ul style="list-style-type: none"> (a) any facility included in items (iv) through (vii) | <p>“bulk electric system” means all system elements that are included in the following:</p> <ul style="list-style-type: none"> (i) all system elements that have all terminals energized at 100 kV or higher that are not part of a radial circuit; (ii) a radial circuit comprised of system elements that have all terminals energized at 100 kV or higher where the radial circuit connects to: <ul style="list-style-type: none"> (a) any facility included in items (iv) through (vii) below; or (b) 2 or more generating resources, being generating units and aggregated generating facilities, that have a combined maximum authorized real power higher than 67.5 MW; | <p><i>Comment #1:</i></p> <p><i>For section (ii) (a) where “any facility included in items (iv) through (vii) below, ATCO Electric would like to suggest that it be extended to include (viii). We propose a reactive power resource at the end of the radial line provides benefits not only to the load but also to the BES at which it is connected. Please consider including (viii) by looking at 754S Ksituan substation as an example in ATCO Electric’s system where this would be applicable.</i></p> |

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| <p>(1) transmission source are generally not included in this definition.</p> | <p>below; or</p> <p>(b) 2 or more generating resources, being generating units and aggregated generating facilities, that have a combined maximum authorized real power higher than 67.5 MW;</p> <p>(iii) a transformer that has its primary terminal and at least one secondary terminal energized at 100 kV or higher;</p> <p>(iv) a generating unit that has a maximum authorized real power higher than 18 MW where system access service is provided through a switchyard that is directly connected to transmission facilities energized at 100 kV or higher, including all system elements from the terminal of the generating unit to the transmission facilities energized at 100 kV or higher;</p> <p>(v) an aggregated generating facility that has a maximum authorized real power higher than 67.5 MW where system access service is provided through a switchyard that is directly connected to transmission facilities energized at 100 kV or higher, including all system elements from the collector bus to the transmission facilities</p> | <p>(iii) a transformer that has its primary terminal and at least one secondary terminal energized at 100 kV or higher;</p> <p>(iv) a generating unit that has a maximum authorized real power higher than 18 MW where system access service is provided through a switchyard that is directly connected to transmission facilities energized at 100 kV or higher, including all system elements from the terminal of the generating unit to the transmission facilities energized at 100 kV or higher;</p> <p>(v) an aggregated generating facility that has a maximum authorized real power higher than 67.5 MW where system access service is provided through a switchyard that is directly connected to transmission facilities energized at 100 kV or higher, including all system elements from the collector bus to the transmission facilities energized at 100 kV or higher, and excluding the generating units and the collector system feeders;</p> <p>(vi) all generating units and aggregated generating facilities where system access service is provided through a common switchyard that is directly connected to transmission facilities energized at 100 kV or higher and the generating units and aggregated generating facilities have a combined maximum authorized real power higher than 67.5 MW, including all system elements from the terminal of each generating unit and from the collector bus of each aggregated generating facility to transmission facilities energized at 100 kV or higher, and excluding the generating units and collector system feeders of each aggregated generating facility;</p> <p>(vii) a blackstart resource, including all system elements from the terminal of the blackstart resource to transmission facilities that are energized at 100 kV or higher; and</p> <p>(viii) a static or dynamic reactive power resource that is dedicated to supplying or absorbing reactive power to or from the transmission system and is</p> | |
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| | <p>energized at 100 kV or higher, and excluding the generating units and the collector system feeders;</p> <p>(vi) all generating units and aggregated generating facilities where system access service is provided through a common switchyard that is directly connected to transmission facilities energized at 100 kV or higher and the generating units and aggregated generating facilities have a combined maximum authorized real power higher than 67.5 MW, including all system elements from the terminal of each generating unit and from the collector bus of each aggregated generating facility to transmission facilities energized at 100 kV or higher, and excluding the generating units and collector system feeders of each aggregated generating facility;</p> <p>(vii) a blackstart resource, including all system elements from the terminal of the blackstart resource to transmission facilities that are energized at 100 kV or higher; and</p> <p>(viii) a static or dynamic reactive power resource that is dedicated to supplying or</p> | <p>connected:</p> <p>(a) to transmission facilities energized at 100 kV or higher;</p> <p>(b) through a dedicated transformer that is directly connected to transmission facilities energized at 100 kV or higher; or</p> <p>(c) through a non-dedicated transformer that has its primary terminal and at least one secondary terminal energized at 100 kV or higher.</p> | |
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| | <p>absorbing reactive power to or from the transmission system and is connected:</p> <ul style="list-style-type: none"> (a) to transmission facilities energized at 100 kV or higher; (b) through a dedicated transformer that is directly connected to transmission facilities energized at 100 kV or higher; or (c) through a non-dedicated transformer that has its primary terminal and at least one secondary terminal energized at 100 kV or higher. | | <p><i>Comment #2:</i></p> <p><i>In reference to section (viii), the definition speaks to the reactive resource and its configuration used to connect to the BES, but it does not mention the dedicated or non-dedicated transformers themselves. This is related to a RFI sent on 2019-07-19 by ATCO Electric . Although the transformer may not have both windings >100 kV, we believe it should be part of BES definition as the transformer is an integral intermediary device between the BES and the reactive power resource itself. If the transformer is compromised for any reason, it will impact reactive power flow to and from the BES and cause system issues. We understand it is above and beyond NERC and AESO's definition, but ask the AESO to consider adding the transformer element. This directly affects PRC-005-AB1-6 as well as the protection system maintenance is performed for the purpose of protecting BES elements.</i></p> |
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