Proposed amended "bulk electric system", and new "radial circuit" and "system access service" definitions for application in Alberta reliability standards

July 3, 2020 – Blackline for Forwarding



Proposed Amended "Bulk electric System" Definition

"bulk electric system" as defined by the Regional Reliability Organization, means all system elements that are included in the following:

- (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 electrical generation radial circuit connects to:
 - (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;
- (iii) a transformer that has its primary terminal and at least one secondary terminal energized at 100 kV or higher;
- (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 lines, interconnections, with neighbouring systems, and associated equipment, generally operated at voltages of one hundred (100) kV or higher; radial <u>facilities</u> energized at 100 kV or higher, including all system elements from the terminal of the generating unit to the transmission facilities serving only load with one (1)energized at 100 kV or higher;
- (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 source are generally not included in this definition. <u>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;</u>
- (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:
- (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

Proposed amended "bulk electric system", and new "radial circuit" and "system access service" definitions for application in Alberta reliability standards

July 3, 2020 – Blackline for Forwarding

- (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 connected:
 - (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;

including all **system elements** from the terminal of the **reactive power** resource to the **transmission facilities** energized at 100 kV or higher.

Proposed new "radial circuit" Definition

"radial circuit" means an arrangement of contiguous system elements energized at 50 kV or higher that:

- (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 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.

Proposed new "system access service" Definition

"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.