Needs identification document checklist application

Date: March 25, 2022

Applicant reference: P1927 – Brooks Solar Farm Connection

Identification

Company name: Alberta Electric System Operator

Name, position and contact information of applicant contact:

Michelle Jackson
Regulatory Administrator
403-539-2502
Michelle.Jackson@aeso.ca

Project details

This application is for:

Generation connection ☑ Non-distribution facility owner load ☐

Project written description, including the need, nature and extent of the project and the Alberta Electric System Operator's (AESO) preferred option:

Solar Krafte Utilities Inc. (Solar Krafte) has requested system access service to connect its proposed Brooks Solar Farm (Facility) to the transmission system in the Brooks area (AESO Planning Area 47, Brooks, which is part of the AESO South Planning Region). The Facility includes Solar Krafte's proposed collector substation, to be designated Zachary 997S. Solar Krafte expects the Facility to be commercially operational by February 28, 2023.

Solar Krafte's request includes a new Rate STS, *Supply Transmission Service,* contract capacity of 400 MW and a new Rate DTS, *Demand Transmission Service,* contract capacity of 0.99 MW.

The Proposed Transmission Development consists of the following elements:

- Add one 240 kilovolt (kV) circuit, approximately 200 metres in length, with a minimum summer capacity of 445 MVA, to connect the Facility to the existing Cassils 324S substation using a radial configuration; and
- Modify the Cassils 324S substation, including adding one 240 kV circuit breaker; and
- Modify, alter, add or remove equipment, including switchgear, and any operational, protection, control and telecommunication devices required to undertake the work as planned and ensure proper integration with the transmission system.

Applicable ratings/capability of any proposed major elements:

The 240 kV transmission circuit shall have a minimum summer capacity of 445 MVA.

Proposed in-service date: February 1, 2023

Cost estimate for the preferred option for the project is attached.

Yes ☑ No ☐

Technical considerations

Single line diagram(s) of the proposed development and study area is attached.

Yes ☑ No ☐

The AESO has conducted appropriate studies and considers that the project will not result in adverse impacts to the Alberta Interconnected Electric System.

Yes ☑ No ☐

List any new or exacerbated Category B system impacts that occur as a result of the project and provide a description ofhow they will be addressed (e.g. description of remedial action schemes that will be used):

Power flow, transient stability and short-circuit studies were conducted to assess the impact that the Proposed Transmission Development and the associated generation would have on the transmission system. Power flow and short-circuit studies were conducted prior to and following the connection of the Proposed Transmission Development and transient stability studies were performed following the connection of the Proposed Transmission Development.

The post-connection assessment identified thermal criteria violations under certain Category B conditions. These thermal criteria violations are listed below.

- 240 kV transmission line 924L (Milo 356s to Langdon 102s)
- 138 kV transmission line 820L (Coaldale 254S to 820AL Tap)
- 138 kV transmission line 820L (Stirling 67S to 820AL Tap)
- 240 kV transmission line 1087L (Cassils 324S to Newell 2075S)
- 240kV transmission line 927L (Milo 356s to Langdon 102s)

A new remedial action scheme (RAS) for 1087L (referred to as RAS 197 – 1087L overload mitigation scheme), existing RAS 36, and real-time operational practices can be used, alone or in combination as appropriate, to mitigate the post-connection thermal criteria violations.

Briefly describe any alternatives to the AESO's preferred option that the AESO considered and why they were ruled out:

No other alternatives were considered given the proximity of the proposed collector substation to the existing Cassils 324S substation.

Participant involvement requirements

Notification requirements have been met and there are no unresolved objections.

Yes ☑ No ☐

Environmental requirements

The AESO does not anticipate significant environmental effects as a result of the project.

Yes ☑ No ☐

Other considerations

If you answered no to any of the questions above, please explain:

n/a

The project raises issues not addressed by the preceding questions.

Yes ☐ No ☑

If yes, please explain:

n/a