



# Needs identification document checklist application

Date: June 17, 2022

Applicant reference: P2409 – Genesee Units G6 and G7 Connection

<b>Identification</b>
<b>Company name:</b> Alberta Electric System Operator
<b>Name, position and contact information of applicant contact:</b>
Michelle Jackson Regulatory Administrator 403-539-2850 Michelle.Jackson@aeso.ca
<b>Project details</b>
<b>This application is for:</b>
Generation connection <input checked="" type="checkbox"/> Non-distribution facility owner load <input type="checkbox"/>
<b>Project written description, including the need, nature and extent of the project and the Alberta Electric System Operator's (AESO) preferred option:</b>
Capital Power L.P. (Capital Power) has requested system access service to connect its approved Genesee Units G6 and G7 to the transmission system in the Warburg area (AESO Planning Area 40, Wabamun, which is part of the AESO Edmonton Planning Region). Capital Power is proposing to add two combustion gas generators, designated as Genesee Unit 6 and Genesee Unit 7; both units will include heat recovery steam generators (HRSGs). The steam from the Genesee Unit 6 HRSG will power the existing Genesee Unit 1 and the steam from Genesee Unit 7 HRSG will power the existing Genesee Unit 2, in a combined cycle configuration (collectively, the Facility). Capital Power expects the Facility to be commercially operational by December 22, 2023.
Capital Power's request includes a new Rate STS, <i>Supply Transmission Service</i> , contract capacity of 466 MW, and a new Rate DTS, <i>Demand Transmission Service</i> , contract capacity of 12 MW at Genesee 330P substation for the combined cycle asset of Genesee Unit 6 and Genesee Unit 1. Capital Power's request also includes a new Rate STS contract capacity of 466 MW and a new Rate DTS contract capacity of 12 MW at Genesee 330P substation for the combined cycle asset of Genesee Unit 7 and Genesee Unit 2.
The Proposed Transmission Development consists of the following elements:
<ul style="list-style-type: none"><li>• Modify the existing Genesee 330P substation, including replacing eight 138 kilovolt (kV) circuit breakers with eight 138 kV circuit breakers, replacing one of the existing 138/500 kV transformers with a 138/500 kV transformer of the same rating (60/80/100 MVA), and adding four 500 kV circuit breakers; and</li><li>• 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.</li></ul>
<b>Applicable ratings/capability of any proposed major elements:</b>
60/80/100 MVA transformer
<b>Proposed in-service date:</b> December 22, 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 of how 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 did not identify any new or exacerbated Reliability Criteria violations under Category B conditions. No Category A issues were identified because of this project.

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

In addition to the Proposed Transmission Development, the AESO considered one other alternative to meet the Market Participant's request for system access service. This alternative involved connecting the facility to the existing 500 kV transmission line 1238L via an in and out configuration. This alternative was ruled out as the AESO tariff does not allow for totalizing metering across multiple connection points.

**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