

605 COMMISSIONING GENERATORS AND ASSOCIATED TRANSMISSION FACILITIES

1. Purpose

To define the process for energizing, commissioning and bringing into commercial operation new generators and the associated transmission facilities, which are being connected to the Alberta Interconnected Electric System (AIES), to ensure that reliability of the system is maintained.

2. Background

The ISO has set out transmission interconnection requirements as posted on the AESO web site for connecting new facilities to the AIES transmission system. At the commissioning stage, the party wishing to connect its facilities is required to perform on line tests to verify the values of estimated parameters provided to the ISO earlier in the process.

The ISO will review results from the commissioning process and if all necessary conditions are met, will accept interconnection of the facilities, or in the case of a generator, approve commercial operation by issuing a commissioning certificate.

Through industry participation, the customer interconnection processes were redesigned and have been implemented. This OPP is revised to align with these customer interconnection processes. Details and templates of the customer processes, such as Service Transmission Service contract, can be found in the AESO web site.

3. Policy

3.1 Definitions

Energization Authorization

means a formal document signed by representatives of the ISO to authorize the facilities as identified therein to connect to the AIES. Any deficiencies are specifically listed. A sample copy of an energization authorization is provided in [Appendix A](#).

Incumbent Transmission Facility Owner (TFO)

means the owner of existing transmission facilities to which the new load or transmission facilities will connect.

Prospective TFO

means the owner of new transmission facilities which are to connect to the existing transmission system.

Prospective Load Customer

means the owner of new load facilities which are to connect directly to the existing transmission system.

Prospective Generating Facility Owner (GFO)

means the owner of new generation facilities which are to connect to the existing transmission system.

3.2 Commissioning policies

- The Prospective TFO will ensure that the energization requirements set out in an energization authorization are met prior to requesting approval from the ISO for the energization of the transmission facilities associated with the generating facility.
- The Prospective GFO will ensure that the energization requirements set out in an energization authorization are met prior to requesting approval from the ISO for the energization and initial synchronization to the grid of the generating facilities.
- To ensure system reliability and to minimize risk to other customers, the Prospective GFO will submit a preliminary commissioning plan at least 30 days in advance of the scheduled energization date to the ISO and the Incumbent TFO. A final commissioning plan will be submitted to the ISO and the Incumbent TFO as early as possible, but in no case later than four days prior to the Operating Week in which the energization or commissioning is scheduled. Any changes to either plan will be forwarded, in writing, to the ISO and the Incumbent TFO as soon as they are known.
- Upon receipt of the preliminary commissioning plan and technical information, the ISO will each carry out analyses with regard to their respective areas of responsibility. Any issues or potential problems will be discussed between the ISO and the Prospective GFO.
- The ISO will provide information to the Incumbent TFO, as part of the weekly System Coordination Plan, on any generation and associated transmission facilities scheduled for commissioning.
- Prior to receiving an energization authorization, the Prospective GFO will certify that all applicable commissioning requirements of the ISO and other TFOs have been met, or that any and all deficiencies have been listed and that a plan for their resolution is in place, with confirmed dates.
- The SC will provide real time approval or denial of the energization timing to the Prospective GFOs prior to the energization of new equipment above 25 kV. The SC will also provide real time approval or denial to the Prospective GFOs prior to commissioning of new equipment while connected to the AIES, for new equipment above 25 kV. The approval will be provided on the basis of the impact of the energization or commissioning activity on AIES system reliability.

3.3 Commercial operation

- Prior to commercial operation, the generating facility will be tested in accordance with the Western Electricity Co-ordinating Council (WECC) test guidelines. A copy of the test report, in the format as specified in the “Requirements for Model Validation Reposting for Generators and Generator Control Systems” as posted on the AESO web site, will be submitted to the ISO for review
- Upon completion of the necessary commissioning and testing, including testing required by the WECC and accepted by the ISO, the ISO will grant the prospective GFO with a

Outage Planning, Commissioning and Testing

OPP 605 Commissioning Generators and Associated Transmission Facilities

commissioning certificate from the ISO certifying the date of the commercial operation. A sample copy of a commissioning certificate is provided in [Appendix B](#).

4. Responsibilities

4.1 ISO

The ISO will:

- Review the energization requirements set out in the energization authorization on an ongoing basis to ensure that sufficient information is obtained to ensure safe and reliable integration of new generating facilities with the existing transmission system while minimizing the effort required by the Parties involved. Moreover, the energization requirements are project-specific and may be revised depending on nature and complexity of the interconnection projects.
- Provide information to the Incumbent TFO, as part of the weekly System Coordination Plan, on any facilities scheduled for commissioning.
- Prepare and sign the energization authorization and the commissioning certificate, and forward a copy of the completed document to the Prospective GFO.

System Controller

The SC will:

- Provide real time approval or denial of the energization timing to the Prospective GFOs prior to the energization of new equipment above 25 kV.
- Provide real time approval or denial of the commissioning timing to the Prospective GFOs prior to commissioning of new equipment while connected to the AIES, for equipment above 25 kV.
- Coordinate with the Prospective GFOs during the real time testing and commissioning to minimize system risks.

4.2 Incumbent Transmission Facility Owner (Incumbent TFO)

- The Incumbent TFO will complete a Joint Operating Procedure (JOP) with the Prospective GFO, where the Incumbent TFO will be directly affected by the interconnection of the generator.

4.3 Prospective Generation Facility Owner (GFO)

The Prospective GFO will:

- Provide the information specified in the energization authorization and such other information as the ISO may from time to time require as part of the commissioning process.
- Coordinate real-time operations with the SC in applying this policy.
- Provide the ISO with plans for commissioning of transmission facilities associated with the generator, large motors, the generators and other major equipment.

OPP 605 Commissioning Generators and Associated Transmission Facilities

- Obtain an energization authorization, prior to the energization of transmission equipment associated with their generators, and prior to the initial synchronization to the grid of the generator(s).
- Obtain real time authorization from the SC prior to the energization of new equipment above 25 kV. Prospective GFOs will obtain real time authorization from the SC prior to commissioning of new equipment while connected to the AIES, for equipment above 25 kV.

4.4 System Members (SM)

- System members will receive notification from the ISO in advance of commissioning activities that are expected to affect their operations, and from the SC (in real time) of commissioning activities.

5. System Controller Procedures

None specified.

Appendix A. Sample of Energization Authorization and Deficiency List form

Energization Authorization and Deficiency List

AESO Project Reference: RP-05-000

Customer Name: [Insert Name]

Project Name: [Insert Name]

Substation Number (Facility Code): [Insert Code]

Scheduled In Service Date: [ISD]

- Notes (if applicable) – e.g., for partial project energization – description of what is included in this authorization, location of documentation on internal folders, etc.

Energization Requirements

	Complete	Incomplete (see reverse)
1. Required metering has been set up at the customer site	<input type="checkbox"/>	<input type="checkbox"/>
2. Metering point definition record has been set up	<input type="checkbox"/>	<input type="checkbox"/>
3. System Access Service Agreement (STS or DTS) has been executed.	<input type="checkbox"/>	<input type="checkbox"/>
4. Confirmation that AESO has received demand transmission service credit.	<input type="checkbox"/>	<input type="checkbox"/>
5. Proposed preliminary and final commissioning activities and schedule have been submitted to AESO by the TFO for incorporation into co-ordination plan.	<input type="checkbox"/>	<input type="checkbox"/>
6. TFO and/or Customer have provided technical data requirements identified in section 5.2 of the Functional Specification (Transmission Modeling Data Requirements)"	<input type="checkbox"/>	<input type="checkbox"/>
7. Visibility of required SCADA points to AESO specified in either the project "Transmission System Operating Characteristics" or in the Functional Specification has been provided	<input type="checkbox"/>	<input type="checkbox"/>
8. Written confirmation that the TFO's installation meets the Functional Specification and Interconnection Requirements has been received	<input type="checkbox"/>	<input type="checkbox"/>
9. Written confirmation that the following studies have been completed has been received: a) grounding b) system protection coordination c) insulation coordination d) power quality e) harmonic	<input type="checkbox"/>	<input type="checkbox"/>

Deficiencies

Following is a list of deficiencies that are to be corrected before the facilities associated with this project are energized. For each item the person responsible for resolution, the required action and the final completion date are given.

Information	Person Responsible	Action Item	Commitment to Complete By Date
Prior to Energization			

Outage Planning, Commissioning and Testing
OPP 605 Commissioning Generators and Associated Transmission Facilities

Parallel with Energization

The above energization requirements have been completed OR an undertaking has been obtained that deficiencies listed above will be corrected before energization. Subject to correction of deficiencies by the dates listed the AESO authorizes energization of these facilities.

AESO Project Manager

Signature

Name

Date

