

# Alberta Reliability Standards Functional Model and Criteria for Registration

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# 1 Introduction

## 1.0 BACKGROUND

As part of the AESO's mandate to carry out the compliance monitoring function for Alberta reliability standards under Section 23 of the *Transmission Regulation*, a registration process has been established to identify the market participants who own, operate, and use transmission, generation, or distribution assets on the Alberta interconnected electric system (AIES) and who have a material impact on the reliability of the system<sup>1</sup>.

All of the functional entities to which the Alberta reliability standards apply, as identified in the Applicability sections of each Alberta reliability standard, are included and defined in this *Alberta Reliability Standards Functional Model and Criteria for Registration*.

It is the responsibility of each market participant to be aware of its legislative obligations. Section 20.8 (b) of the *Electric Utilities Act* states that a market participant must comply with the Alberta reliability standards. A market participant is required to comply with the applicable Alberta reliability standards regardless of the registration under this *Alberta Reliability Standards Functional Model and Criteria for Registration*.

The AESO will maintain and post on its website the *Alberta Reliability Standards Functional Model and Criteria for Registration*.

## 1.1 PURPOSE OF THIS DOCUMENT

This document is intended to assist market participants in (a) assessing whether they are a candidate for registration as one or more functional entities under the AESO's Alberta reliability standards Compliance Monitoring Program; and (b) determining which Alberta reliability standards are applicable to them.

## 1.2 APPLICABILITY

This document applies to all market participants as defined in the *Electric Utilities Act*.

<sup>1</sup> Note that the AESO's compliance monitoring function is carried out in accordance with section 103.12 of the ISO rules, *Compliance Monitoring*.

# 2 About this Document

## 2.0 SECTIONS

This document is divided into 5 sections:

### **Section 1:** Introduction

This section provides the background, purpose and applicability of this document.

### **Section 2:** About this Document (this section)

This section provides information on how to use this document.

### **Section 3:** Procedures

This section provides guidance to assist a market participant in determining whether it is a candidate to register as one or more functional entities.

### **Section 4:** Guidelines

This section set outs the guidelines related to the functional model and criteria for registration.

### **Section 5:** Related Documents and Revision History

This section provides links to related documents referenced and the revision history of this document.

## 2.1 NAVIGATING THE ELECTRONIC VERSION

The electronic version of this document contains useful navigation tools that can be used to find pertinent information without searching through each section.

### **Table of contents**

The table of contents shown prior to section 1 can be used as a means of navigating to any section or subsection in the document.

To jump to a section or subsection, simply click on any line item in the table of contents.

### **Underlined text**

Text that is underlined in blue is used to indicate a link to related topics within this document, or to other related documents on the internet.

To use the link, click on the underlined text.

# 3 Procedures

To determine whether a market participant is a candidate to register as one or more functional entities, complete the following steps:

## 1. Review the functional entities and definitions

Review the functional entities and the associated functional entity definition(s) from the AESO's *Consolidated Authoritative Document Glossary* listed in the first and second columns of the Functional Entity table shown in section 4 - Guidelines to determine which functional entity definitions apply to your organization. For each functional entity definition that applies to your organization, go to step 2 below. A market participant may be registered as one or more functional entities.

If none of the functional entity definitions apply to your organization, your organization is not a candidate to register for compliance monitoring under that functional entity.

## 2. Review the registration criteria

Review the questions listed in the "Registration Criteria" column of the Functional Entity table found in section 4 - Guidelines:

- a. If the answer 'yes' to ANY of the questions listed for a particular functional entity, your organization is a candidate to register as that functional entity. Go to step 3, below.
- b. If you answer 'no' to EACH of the questions listed for a particular functional entity, your organization is not a candidate to register as that functional entity.

If you are unsure of how to use the registration criteria, contact the AESO's Compliance group for assistance.

If your organization is not a candidate to register as any functional entity, registration for the purpose of the AESO's Alberta reliability standards Compliance Monitoring Program is not required at this time.

## 3. Submit a registration form

A market participant who is a candidate to register as one or more functional entities may obtain a registration form on the AESO website. Click [here](#) or follow the path: Rules, Standards and Tariff > Compliance > Alberta Reliability Standards Compliance > Registration to locate the form. Completed forms should be sent to [rscompliance@aeso.ca](mailto:rscompliance@aeso.ca).

Detailed procedures related to registration can be found in the *Alberta Reliability Standards Registration Guide*.

# 4 Guidelines

The purpose of this section is to set out the guidelines related to the functional model and criteria for registration.

## 4.0 FUNCTIONAL MODEL OVERVIEW

The AESO has identified in the Functional Entity table the terms used to identify the functional entities in the Alberta reliability standards.

#### 4.1 FUNCTIONAL ENTITY TABLE

This table provides the registration criteria for each functional entity, which consists of question(s) to help market participants determine whether their organization should register for a particular functional entity. If your organization meets the definition and ‘yes’ is the appropriate answer to ANY of the question(s) listed in the associated “Registration Criteria” column, your organization is a candidate to register as that functional entity for the purpose of the AESO’s Alberta reliability standards Compliance Monitoring Program.

| Functional Entity                                       | Functional Entity Definition <sup>2</sup>   | Registration Criteria  |
|---|---|--|
| <b>Independent System Operator (ISO)</b>                | “ <b>Independent System Operator</b> ” has the meaning ascribed to it in the <b>Act</b> .   | Applicable to the <b>ISO</b> only.   |
| <b>Legal owner of an aggregated generating facility</b> | <p>“<b>legal owner</b>” means the <b>person</b> who owns electric industry property including any one or more of:</p> <ul style="list-style-type: none"> <li>(i) a <b>generating unit</b>;</li> <li>(ii) any <b>aggregated generating facilities</b>;</li> <li>(iii) a <b>transmission facility</b>;</li> <li>(iv) an <b>electric distribution system</b>;</li> <li>(v) an industrial system that has been designated as such by the <b>Commission</b>; and</li> <li>(vi) a load facility with <b>system access service</b> under subsection 101(2) of the <b>Act</b>.</li> </ul> <p>“<b>aggregated generating facility</b>” means an aggregation of <b>generating units</b>, including any <b>reactive power</b> resources, which are:</p> <ul style="list-style-type: none"> <li>(i) designated by the <b>ISO</b>; and</li> <li>(ii) situated in the same proximate location at one or more <b>point of connections</b>.</li> </ul> | <p>Do you own an <b>aggregated generating facility</b> that is directly connected to the <b>transmission system</b> or to <b>transmission facilities</b> within the City of Medicine Hat?</p> <p>Please also see other notes in section 4.2.</p> |

<sup>2</sup> as defined in the AESO’s *Consolidated Authoritative Document Glossary*.

| Functional Entity  | Functional Entity Definition <sup>2</sup>   | Registration Criteria  |
|--|---|--|
| <p><b>Legal owner of an electric distribution system</b></p> | <p>“<b>legal owner</b>” means the <b>person</b> who owns electric industry property including any one or more of:</p> <ul style="list-style-type: none"> <li>(i) a <b>generating unit</b>;</li> <li>(ii) any <b>aggregated generating facilities</b>;</li> <li>(iii) a <b>transmission facility</b>;</li> <li>(iv) an <b>electric distribution system</b>;</li> <li>(v) an industrial system that has been designated as such by the <b>Commission</b>; and</li> <li>(vi) a load facility with <b>system access service</b> under subsection 101(2) of the <b>Act</b>.</li> </ul> <p>“<b>electric distribution system</b>” as defined in the <b>Act</b> means the plant, works, equipment, systems and services necessary to distribute electricity in a service area, but does not include a <b>generating unit</b> or a <b>transmission facility</b>.</p>   | <p>Do you own an <b>electric distribution system</b> that is either directly connected to the <b>transmission system</b> or to <b>transmission facilities</b> within the City of Medicine Hat?</p>   |
| <p><b>Legal owner of a generating unit</b></p>               | <p>“<b>legal owner</b>” means the <b>person</b> who owns electric industry property including any one or more of:</p> <ul style="list-style-type: none"> <li>(i) a <b>generating unit</b>;</li> <li>(ii) any <b>aggregated generating facilities</b>;</li> <li>(iii) a <b>transmission facility</b>;</li> <li>(iv) an <b>electric distribution system</b>;</li> <li>(v) an industrial system that has been designated as such by the <b>Commission</b>; and</li> <li>(vi) a load facility with <b>system access service</b> under subsection 101(2) of the <b>Act</b>.</li> </ul> <p>“<b>generating unit</b>” as defined in the <b>Act</b> means the component of a power plant that produces, from any source, electric energy and <b>ancillary services</b>, and includes a share of the following associated facilities that are necessary for the safe, reliable and economic operation of the <b>generating unit</b>, which may be used in</p> | <p>Do you own a <b>generating unit</b> that:</p> <ul style="list-style-type: none"> <li>(i) is not part of an <b>aggregated generating facility</b>; and</li> <li>(ii) is either directly connected to the <b>transmission system</b> or to <b>transmission facilities</b> within the City of Medicine Hat; or</li> <li>(iii) is part of an industrial complex or power plant that is directly connected to the <b>transmission system</b> or to <b>transmission facilities</b> within the City of Medicine Hat?</li> </ul> <p>Please also see other notes in section 4.2.</p> |



| Functional Entity                                    | Functional Entity Definition <sup>2</sup>   | Registration Criteria  |
|--|---|--|
|  | <p>common with other <b>generating units</b>:</p> <ul style="list-style-type: none"> <li>(i) fuel and fuel handling equipment;</li> <li>(ii) cooling water facilities;</li> <li>(iii) switch yards;<br/><a href="#">(See note 1 in section 4.2)</a></li> <li>(iv) other items.</li> </ul>   |  |
| <p><b>Legal owner of a transmission facility</b></p> | <p>“<b>legal owner</b>” means the <b>person</b> who owns electric industry property including any one or more of:</p> <ul style="list-style-type: none"> <li>(i) a <b>generating unit</b>;</li> <li>(ii) any <b>aggregated generating facilities</b>;</li> <li>(iii) a <b>transmission facility</b>;</li> <li>(iv) an <b>electric distribution system</b>;</li> <li>(v) an industrial system that has been designated as such by the <b>Commission</b>; and</li> <li>(vi) a load facility with <b>system access service</b> under subsection 101(2) of the <b>Act</b>.</li> </ul> <p>“<b>transmission facility</b>” as defined in the <b>Act</b> means an arrangement of conductors and transformation equipment that transmits electricity from the high voltage terminal of the generation transformer to the low voltage terminal of the step down transformer operating phase to phase at a nominal high voltage level of more than 25000 volts to a nominal low voltage level of 25000 volts or less, and includes</p> <ul style="list-style-type: none"> <li>(i) transmission lines energized in excess of 25000 volts,</li> <li>(ii) insulating and supporting structures,</li> <li>(iii) substations, transformers and switchgear,</li> <li>(iv) operational, telecommunication and control devices,</li> <li>(v) all property of any kind used for the purpose of, or in connection with, the operation of the transmission facility,</li> </ul> | <p>Do you own a <b>transmission facility</b>?</p> <p>For a <b>legal owner</b> of a <b>generating unit</b> or <b>aggregated generating facility</b>, please see notes in section 4.2.</p> |

| Functional Entity   | Functional Entity Definition <sup>2</sup>   | Registration Criteria  |
|---|---|--|
|   | <p>including all equipment in a substation used to transmit electric energy from (A) the low voltage terminal, to (B) <b>electric distribution system</b> lines that exit the substation and are energized at 25000 volts or less, and</p> <p>(vi) connections with electric systems in jurisdictions bordering Alberta, but does not include a <b>generating unit</b> or an <b>electric distribution system</b></p>  |  |
| <p><b>Market participant</b> receiving service under Rate DTS of the ISO tariff</p> | <p>“<b>market participant</b>” as defined in the <b>Act</b> means</p> <p>(i) any <b>person</b> that supplies, generates, transmits, distributes, trades, exchanges, purchases or sells electricity, electric energy, electricity services or <b>ancillary services</b>, or</p> <p>(ii) any broker, brokerage or forward exchange that trades or facilitates the trading of electricity, electric energy, electricity services or <b>ancillary services</b>.</p>   | <p>Do you receive service under Rate DTS of the <b>ISO tariff</b>, unless such service is used solely for supplying station service to a <b>generating unit</b> or an <b>aggregated generating facility</b>?</p>                                     |
| <p><b>Operator</b> of an <b>aggregated generating facility</b></p>                  | <p>“<b>operator</b>” means a <b>person</b> given expressed authority by a <b>legal owner</b> to operate on the <b>legal owner’s</b> behalf any one or more of its electric industry properties, including:</p> <p>(i) a <b>generating unit</b>;</p> <p>(ii) any <b>aggregated generating facilities</b>;</p> <p>(iii) a <b>transmission facility</b>;</p> <p>(iv) an <b>electric distribution system</b>;</p> <p>(v) an industrial system that has been designated as such by the <b>Commission</b>; and</p> <p>(vi) a <b>load facility</b> with <b>system access service</b> under subsection 101(2) of the <b>Act</b>;</p> <p>(vii) and includes the <b>legal owner</b>, if no such other <b>person</b> has been so authorized.</p> <hr/> <p>“<b>aggregated generating facility</b>” means an aggregation of <b>generating units</b>, including any <b>reactive power</b> resources, which are:</p> | <p>Do you operate an <b>aggregated generating facility</b> that is directly connected to the <b>transmission system</b> or to <b>transmission facilities</b> within the City of Medicine Hat?</p> <p>Please also see other notes in section 4.2.</p> |

| Functional Entity                                  | Functional Entity Definition <sup>2</sup>   | Registration Criteria  |
|--|---|--|
|  | <ul style="list-style-type: none"> <li>(i) designated by the <b>ISO</b>; and</li> <li>(ii) situated in the same proximate location at one or more <b>point of connections</b>.</li> </ul>   |  |
| <b>Operator of an electric distribution system</b> | <p>“<b>operator</b>” means a <b>person</b> given expressed authority by a <b>legal owner</b> to operate on the <b>legal owner's</b> behalf any one or more of its electric industry properties, including:</p> <ul style="list-style-type: none"> <li>(i) a <b>generating unit</b>;</li> <li>(ii) any <b>aggregated generating facilities</b>;</li> <li>(iii) a <b>transmission facility</b>;</li> <li>(iv) an <b>electric distribution system</b>;</li> <li>(v) an industrial system that has been designated as such by the <b>Commission</b>; and</li> <li>(vi) a <b>load facility with system access service</b> under subsection 101(2) of the <b>Act</b>;</li> <li>(vii) and includes the <b>legal owner</b>, if no such other <b>person</b> has been so authorized.</li> </ul> <p>“<b>electric distribution system</b>” as defined in the <b>Act</b> means the plant, works, equipment, systems and services necessary to distribute electricity in a service area, but does not include a <b>generating unit</b> or a <b>transmission facility</b>.</p> | <ul style="list-style-type: none"> <li>1. Do you operate an <b>electric distribution system</b> that is directly connected to the <b>transmission system</b> or to <b>transmission facilities</b> within the City of Medicine Hat?</li> <li>2. Are you counterparty to an agreement with a <b>market participant</b> receiving service under Rate DTS of the <b>ISO tariff</b> for the provision of load shed service?</li> </ul>                  |
| <b>Operator of a generating unit</b>               | <p>“<b>operator</b>” means a <b>person</b> given expressed authority by a <b>legal owner</b> to operate on the <b>legal owner's</b> behalf any one or more of its electric industry properties, including:</p> <ul style="list-style-type: none"> <li>(i) a <b>generating unit</b>;</li> <li>(ii) any <b>aggregated generating facilities</b>;</li> <li>(iii) a <b>transmission facility</b>;</li> <li>(iv) an <b>electric distribution system</b>;</li> <li>(v) an industrial system that has been designated as such by the <b>Commission</b>; and</li> <li>(vi) a <b>load facility with system access service</b> under subsection 101(2) of the</li> </ul>  | <p>Do you operate a <b>generating unit</b> that:</p> <ul style="list-style-type: none"> <li>(i) is not part of an <b>aggregated generating facility</b>; and</li> <li>(ii) is directly connected to the <b>transmission system</b> or to <b>transmission facilities</b> within the City of Medicine Hat; or</li> <li>(iii) is part of an <b>industrial complex</b> or power plant that is directly connected to the <b>transmission</b></li> </ul> |

| Functional Entity                                 | Functional Entity Definition <sup>2</sup>   | Registration Criteria   |
|---|---|---|
|   | <p><b>Act;</b></p> <p><b>(vii)</b> and includes the <b>legal owner</b>, if no such other <b>person</b> has been so authorized.</p> <hr/> <p><b>“generating unit”</b> as defined in the <b>Act</b> means the component of a power plant that produces, from any source, electric energy and ancillary services, and includes a share of the following associated facilities that are necessary for the safe, reliable and economic operation of the generating unit, which may be used in common with other generating units:</p> <p><b>(i)</b> fuel and fuel handling equipment;</p> <p><b>(ii)</b> cooling water facilities;</p> <p><b>(iii)</b> switch yards;<br/> <a href="#">(See note 1 in section 4.2)</a></p> <p><b>(iv)</b> other items.</p>  | <p><b>system</b> or to <b>transmission facilities</b> within the City of Medicine Hat?</p> <p>Please also see other notes in section 4.2.</p>                                       |
| <p><b>Operator of a transmission facility</b></p> | <p><b>“operator”</b> means a <b>person</b> given expressed authority by a <b>legal owner</b> to operate on the <b>legal owner's</b> behalf any one or more of its electric industry properties, including:</p> <p><b>(i)</b> a <b>generating unit</b>;</p> <p><b>(ii)</b> any <b>aggregated generating facilities</b>;</p> <p><b>(iii)</b> a <b>transmission facility</b>;</p> <p><b>(iv)</b> an <b>electric distribution system</b>;</p> <p><b>(v)</b> an industrial system that has been designated as such by the <b>Commission</b>; and</p> <p><b>(vi)</b> a <b>load facility with system access service</b> under subsection 101(2) of the <b>Act</b>;</p> <p><b>(vii)</b> and includes the <b>legal owner</b>, if no such other <b>person</b> has been so authorized.</p> <hr/> <p><b>“transmission facility”</b> as defined in the <b>Act</b> means an arrangement of conductors and transformation equipment that transmits electricity from the high voltage terminal of the generation transformer to the low voltage terminal of the step down transformer operating</p> | <p>Do you operate a <b>transmission facility</b>?</p> <p>For an operator of a <b>generating unit</b> or <b>aggregated generating facility</b>, please see notes in section 4.2.</p> |

| Functional Entity | Functional Entity Definition <sup>2</sup>  | Registration Criteria |
|-------------------|--|-----------------------|
|                   | <p>phase to phase at a nominal high voltage level of more than 25000 volts to a nominal low voltage level of 25000 volts or less, and includes</p> <ul style="list-style-type: none"> <li>(i) transmission lines energized in excess of 25000 volts,</li> <li>(ii) insulating and supporting structures,</li> <li>(iii) substations, transformers and switchgear,</li> <li>(iv) operational, telecommunication and control devices,</li> <li>(v) all property of any kind used for the purpose of, or in connection with, the operation of the transmission facility, including all equipment in a substation used to transmit electric energy from (A) the low voltage terminal, to (B) <b>electric distribution system</b> lines that exit the substation and are energized at 25000 volts or less, and</li> <li>(vi) connections with electric systems in jurisdictions bordering Alberta, but does not include a <b>generating unit</b> or an <b>electric distribution system</b></li> </ul> |                       |

#### 4.2 NOTES ON SWITCH YARDS

The purpose of this section is to assist the **legal owner** or **operator** of a **generating unit** and the **operator** of an **aggregated generating facility** to determine whether or not they are to register as a **legal owner** or **operator** of a **transmission facility**.

1. A switch yard ends at the switch yard fence and may contain facilities such as a unit transformer, circuit breakers, disconnect switches, busses, jumpers, cables, line terminal equipment and associated **protection systems**.
2. For the purpose of applying the Alberta **reliability standards**, a switch yard associated with a **generating unit** or an **aggregated generating facility** means a switch yard that is adjacent to a **generating unit** or an **aggregated generating facility** and is owned or operated by the **legal owner** or **operator** of the **generating unit** or **aggregated generating facility**.
3. A switch yard associated with a **generating unit** or an **aggregated generating facility**, as clarified above, is considered to be part of the **generating unit** or the **aggregated generating facility** and is not considered to be a **transmission facility**.
4. A switch yard that is not associated with a **generating unit** or an **aggregated generating facility** is considered to be a **transmission facility**.

# 5 Related Documents and Revision History

## 5.0 RELATED DOCUMENTS

Documents referenced in this document can be found by clicking on the following website page links:

[Consolidated Authoritative Document Glossary](#)

[Alberta Reliability Standards Registration Form](#)

[Alberta Reliability Standards Registration Guide](#)

## 5.1 REVISION HISTORY

This document is a compliance monitor information document, and not a compliance monitor authoritative document. This document is provided for information purposes only and is intended to provide guidance. Revisions to this document may be made from time to time by the AESO Compliance group. Registered market participants will be notified of revisions through the AESO Stakeholder Newsletter.

| Revision    | Issue Date         | Comments  |
|-------------|--------------------|---|
| version 1.0 | June 25, 2009      | Posted on AESO's website  |
| version 2.0 | September 21, 2009 | <ul style="list-style-type: none"> <li>Generator Facility Owner (GFO) Criteria for registration updated.</li> <li>Generator Operator (GOP) criteria for registration updated.</li> </ul>  |
| version 3.0 | October 6, 2009    | <ul style="list-style-type: none"> <li>Pool Participant (PP) criteria for registration updated.</li> <li>Version 3 posted on AESO's website</li> </ul>  |
| version 4.0 | December 9, 2010   | Update of document for the following: <ul style="list-style-type: none"> <li>Transition of Authoritative Documents (TOAD) formatting (i.e. <i>italics</i> to bold presentation of defined terms)</li> <li>Inclusion of new ISO Consolidated Authoritative Document Glossary terms used in reliability standards under development</li> <li>Replacement of Generator Operator (GOP) functional entity in Table 1 with "operator of a generating unit", which is currently in effect on a number of reliability standards</li> <li>Change to questions within the "Registration Criteria for Reliability Standards" column in Table 1 to more accurately describe those entities that are relevant to the AESO's Compliance Monitoring Program and to reflect updated applicability of reliability standards</li> </ul> |
| version 5.0 | December 12, 2012  | Revisions made to this version of the registry are made as a result of the changes to applicability in the administrative filing of 10 reliability standards and the anticipated applicability of standards.  |
| Version 6.0 | April 14, 2016     | Table 1 removed; Table 2 renamed; <b>Pool Participant</b> and the term "wind" referenced in the registration criteria of the <b>aggregated generating facility</b> functional entity removed; other administrative changes included.  |