

ISO Rules

Part 500 Facilities

Division 502 Technical Requirements

Section 502.10 Revenue Metering System

Technical and Operating Requirements



Applicability

- 1 Section 502.10 applies to:
 - (a) the **legal owner** of a **revenue meter**; and
 - (b) the **ISO**.

Requirements

Successor to Prior Requirements

- 2(1)** This ~~s~~Section 502.10 succeeds and replaces the AESO Measurement System Standard, which came into effect as of September 18, 2007.
- (2)** The AESO Measurement System Standard referred to in subsection 2(1), together with any other prior standards or drafts of standards on the subject matter, will no longer ~~will~~ be in force and effect as of the effective date of this ~~s~~Section 502.10.

Functional Specification

- 3(1)** The **ISO** must approve of a functional specification containing further details, work requirements and specifications for the design, construction and operation of a **revenue meter** for a facility.
- (2)** The functional specification referred to in subsection 3(1) must be generally consistent with the provisions of this Section 502.10, but may contain material variances the **ISO** approves of based upon its discrete analysis of any ~~one (1)~~ or more of the technical, economic, safety, operational and reliability requirements of the **interconnected electric system** related to the specific facility.

Measurement Point Definition Record

4(1) The **legal owner** of a **revenue meter** must, where such **legal owner** requires a new **measurement point definition record** or an amendment to an existing **measurement point definition record**, apply submit a complete application form to the **ISO** ~~no later than 30 days~~, prior to ~~the first day of the month in which the legal owner of the revenue meter proposes to energize~~ energizing the new or altered **revenue metering system** ~~for the first time~~.

~~**(2)** The **legal owner** of a **revenue meter** must submit to the **ISO** the information prescribed by the **ISO** when applying for a new or amended **measurement point definition record** in accordance with subsection 4(1).~~

~~**(32)** The **ISO** must issue a **measurement point definition record** for a **measurement point** to the **legal owner** of the **revenue meter**, or to a **person** designated by the **legal owner** of the **revenue meter**, if the information in the application form submitted in accordance with subsection 4(~~21~~):~~

- (a) is complete;
- (b) allows for the proper measurement of **metered energy**, **metered demand**, and metered **apparent power** in accordance with **ISO rules** and the **ISO tariff**, as applicable; and
- (c) avoids a metering configuration that results in a deductive totalizing calculation for the **measurement point**.

~~**(43)** The **legal owner** of a **revenue meter** must install and operate a **revenue meter** in accordance with the measurement point definition record ~~issued by the ISO~~ issues in accordance with subsection 4(~~32~~).~~

ISO Rules

Part 500 Facilities

Division 502 Technical Requirements

Section 502.10 Revenue Metering System

Technical and Operating Requirements



Revenue Meter

5(1) ~~The legal owner of a revenue meter must ensure that the revenue meter is approved, verified, sealed, re-verified and sealed, as applicable, in accordance with the *Electricity and Gas Inspections Act, RSC 1985 c E-4, as amended.*~~

(2)—The legal owner of a revenue meter must ensure that the revenue meter has an accuracy class rating that is less than or equal to 0.2% for Watthour measurement if:

- (a) the capacity of the **metering point** of the revenue meter is greater than or equal to 1.0 MVA; and
- (b) the revenue meter is not the subject of a dispensation under the *Electricity and Gas Inspection Act, RSC 1985 c E-4, as amended.*

(32) The legal owner of a revenue meter must ensure that the revenue meter has an accuracy class rating that is less than or equal to 0.5% for Varhour measurement if:

- (a) the capacity of the **metering point** of the revenue meter is greater than or equal to 1.0 MVA; and
- (b) the revenue meter is not the subject of a dispensation under the *Electricity and Gas Inspection Act, RSC 1985 c E-4, as amended.*

Measurement Transformer

6(1) The legal owner of a revenue meter must ensure that the measurement transformer has an accuracy class rating less than or equal to 0.3% if:

- (a) the capacity of the **metering point** of the revenue meter is greater than or equal to 1.0 MVA; and
- (b) the revenue meter is not the subject of a dispensation under the *Electricity and Gas Inspection Act, RSC 1985 c E-4, as amended.*

(2) The legal owner of a revenue meter must, unless the ISO approves otherwise, ensure that the measurement transformer:

- (a) is located and connected without compensation methods;
- (b) produces a real **metering point**; and
- (c) has a dedicated current transformer core for measurement.

Metering Data Services

7(1) The legal owner of a revenue meter must retain metering data from the revenue metering system, including a record of final estimates and adjustments, and the method used to perform the estimates or adjustments, ~~in the electronic format specified in the *Commission's Rule 021: Settlement System Code Rules* for a period of at least 8 years.~~

(2) The legal owner of a revenue meter must process metering data for each measurement point in accordance with the algorithm in the measurement point definition record issued in accordance with subsection 4(3).

(3) The legal owner of a revenue meter must, within 30 days of energizing the revenue meter for the first time, validate the metering equipment and the metering data ~~using reasonable methods and alternative data sources.~~

(4) The legal owner must maintain validation records until the next in-situ testing date set out in

ISO Rules

Part 500 Facilities

Division 502 Technical Requirements

Section 502.10 Revenue Metering System

Technical and Operating Requirements



subsection 8(1).

Revenue Meter Testing and Reporting

~~8(1) NOTE TO DRAFT: The AESO is continuing to assess the minimum requirements for in-situ testing for proposed new Section 502.10. At the upcoming December 11, 2019 Stakeholder consultation session, the AESO will be seeking specific input from stakeholders on:~~

- ~~— the methodology for determining MW class;~~
- ~~— the in-situ test frequency for each MW class; and~~
- ~~— the requirements and process for test frequency change when the MW class is changed for a meter.~~

~~Prior to the Stakeholder consultation meeting, stakeholders are encouraged to review section 6.4.3 and Appendix 5 of the *Measurement System Standard*, and the June 29, 2017 Working Group Meeting Notes.~~

8(1) The legal owner of a revenue meter must perform in-situ testing:

- (a) upon a change of any metering equipment associated with the revenue meter; and
- (b) as per the testing intervals set out in Table 1:

Table 1 – In-situ Testing Frequency Based on Revenue Meter MW Class

| <u>MW Class</u> | <u>Testing Interval</u> |
|---|--|
| <u>(i) Greater than 20 MW</u> | <u>(A) Every 2 years from the date of commissioning; or</u> <u>(B) For existing revenue meters, every 2 years from the date of the previous in-situ test.</u> |
| <u>(ii) Greater than or equal to 5 MW and less than or equal to 20 MW</u> | <u>(A) Every 4 years from the date of commissioning; or</u> <u>(B) For existing revenue meters, every 4 years from the date of the previous in-situ test.</u> |

(2) The legal owner of a revenue meter must calculate the MW class in subsection 8(1)(b) as follows:

- (a) determine the total active energy in MWh at the measurement point for the calendar year; and
- (b) divide the total active energy determined in subsection 8(2)(a) by the number of settlement intervals in the same calendar year, including the intervals in which active energy is zero.

(23) The legal owner of a revenue meter must provide the results of the in-situ test performed in subsection 8(1) to the ISO if the test resulted in an error measurement of +/- 3%.

(34) Notwithstanding subsections 8(1), 8(2) and 8(3) above, the legal owner of a revenue meter must, at the request of the ISO, complete and report the results of an in-situ test for the metering equipment within 30 days of receiving the ISO's request or within a mutually agreed time frame.:

ISO Rules

Part 500 Facilities

Division 502 Technical Requirements

Section 502.10 Revenue Metering System

Technical and Operating Requirements



- ~~(a) undertake and complete in-situ tests for the **metering equipment** within a mutually agreed time frame; and~~
- ~~(b) report the results to the **ISO** within **30 days** of receiving the **ISO's** request.~~

Measurement Data Corrections

~~**9(1)** The **legal owner** of a **revenue meter** must, if the **legal owner** discovers an error in measurement data, where the net difference in consumption from the measurement data previously submitted to the **ISO** is:~~

- ~~(a) 100 MWh or greater, for sites other than large micro-generation; or~~
- ~~(b) 100 kWh or greater for large micro-generation sites,~~

~~notify the **ISO** in writing of the reason for the error.~~

~~that has been submitted to the **ISO** for financial settlement, notify the **ISO** of the error as soon as practicable in the form the **ISO** specifies.~~

~~**(2)** The **legal owner** of a **revenue meter** must include the following information in the notice referred to in subsection 9(1):~~

- ~~— (a) the reason for the error; and~~
- ~~— (b) the correct measurement data.~~

~~**(3)** The **ISO** must review the information submitted in the notice referred to in subsection 9(1) and confirm whether the previously submitted measurement data is erroneous.~~

~~**(4)** The **legal owner** of a **revenue meter** must submit the correct measurement data to the **ISO** as soon as practicable if the **ISO's** review in subsection 9(3) confirms that the previously submitted measurement data was erroneous.~~

Restoration

~~**10(1)** The **legal owner** of a **revenue meter** must, upon becoming aware of a failure of the **revenue metering system** that may result in a restatement of measurement data that has been submitted to the **ISO**, notify the **ISO** in writing of the failure, restore the **revenue metering system** within **30 days**.~~

~~**(2)** The **legal owner** of a **revenue meter** must, notify the **ISO** in writing of the failure if the **legal owner** is unable to restore the **revenue metering system** within **30 days** of providing the notification under in accordance with subsection 10(1);~~

- ~~(a) investigate and determine the nature and extent of the failure;~~
- ~~(b) provide the **ISO** with written notification detailing the nature and extent of the failure; and~~
- ~~(c) submit to the **ISO** a plan to restore the **revenue metering system**.~~

~~**(3)** The **ISO** must:~~

- ~~(a) approve the restoration plan submitted in accordance with subsection 10(2)(c) if the **ISO** is satisfied that the restoration plan will resolve the failure within a reasonable amount of time; or~~
- ~~(b) direct the **legal owner** of the **revenue meter** to amend the restoration plan in a manner that will resolve the failure within a reasonable amount of time.~~

~~**(3)** The **legal owner** of a **revenue meter** must include a plan to restore the **revenue metering system** when notifying the **ISO** in accordance with subsection 10(2).~~

ISO Rules

Part 500 Facilities

Division 502 Technical Requirements

Section 502.10 Revenue Metering System

Technical and Operating Requirements



(4) The **legal owner** of a **revenue meter** must ~~amend~~notify the ISO in writing after completing the restoration ~~plan in accordance with the ISO's direction provided in subsection 10(3)(b) of the revenue metering system~~ in accordance with the plan referred to in subsection 10(3).

~~(5) The legal owner of a revenue meter must restore the revenue metering system in accordance with:~~

~~(a) the restoration plan approved by the ISO pursuant to subsection 10(3)(a); or~~

~~(b) the restoration plan amended in accordance with subsection 10(4).~~

Revision History

| Date | Description |
|-------------------|-----------------|
| <u>xxxx-xx-xx</u> | Initial release |