

ISO Rules

Part 500 Facilities

Division 503 Technical & Operating Requirements

Section 503.17 Revenue Metering System



Applicability

- 1 Section 503.17 applies to:
 - (a) the **legal owner** of a **revenue meter**; and
 - (b) the **ISO**.

Requirements

Revenue Metering System

2(1) The **legal owner** of a **revenue meter** must install and operate a **revenue metering system** that allows for financial settlement as required by the **ISO rules** and **ISO tariff**.

Substations that Connect to an Electric Distribution System

3(1) The **legal owner** of a **revenue meter** must install, at a minimum, all measurement transformers, associated wiring, and rack space required for a **revenue metering system** at each switchgear in a switchgear lineup if:

- (a) the switchgear lineup connects a **transmission facility** to an **electric distribution system**; and
- (b) the complete switchgear lineup is installed after <effective date>.

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**, submit a complete application form to the **ISO** prior to energizing the new or altered **revenue metering system**.

(2) 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 2(1):

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

Revenue Meter

5(1) 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.

(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 0.5% for Varhour measurement if:

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- (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 measurement transformer 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

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, 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 2(2).

(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.

(4) The **legal owner** must maintain validation records until the date of the next in-situ test.

Revenue Meter Testing and Reporting

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

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

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MW Class	Testing Interval
or equal to 20 MW	(B) For existing revenue meters, every 4 years from the date of the previous in-situ test.

- (2) The **legal owner** of a **revenue meter** must calculate the MW class in subsection 6(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 6(2)(a) by the number of settlement intervals in the same calendar year, including the intervals in which active energy is zero.
- (3) The **legal owner** of a **revenue meter** must provide the results of the in-situ test performed in subsection 6(1) to the **ISO** if the test resulted in an error measurement of +/- 3%.
- (4) Notwithstanding subsections 6(1), 6(2) and 6(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.

Measurement Data Corrections

- 9** 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.

Restoration

- 10(1)** The **legal owner** of a **revenue meter** must, upon becoming aware of a failure of the **revenue metering system**, 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** in accordance with subsection 8(1).
- (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 8(2).
- (4) The **legal owner** of a **revenue meter** must notify the **ISO** in writing after completing the restoration of the **revenue metering system** in accordance with the plan referred to in subsection 8(3).

Revision History

Date	Description
202X-XX-XX	Included new subsection 2 to require legal owners of revenue meters to install revenue metering that will allow for appropriate financial settlement. Included new subsection 3 to require infrastructure required for feeder metering to be installed at substations that connect to electric distribution systems to implement the adjusted metering practice. Removed installation requirement under subsection 4 as redundant to new

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Date	Description
	subsection 2.
2024-04-01	Amended, as approved in Commission Decision 28176-D01-2023 issued on June 13, 2023. See <i>Table of Concordance for the Transition from Division 502 to Division 503</i> on www.aeso.ca for further information regarding the change from Division 502 – Technical Requirements to Division 503 – Technical and Operating Requirements.
2021-03-18	Initial release.