

## Commissioning Verification Form

(For >12kW to 500kW Inverter-based Generators)

This commissioning verification form (CVF) is required for small or mid-size generators applying for a Connection Agreement with Alectra Utilities. This document must be signed and sealed by a licensed Ontario Professional Engineer (P.Eng.). A system commissioning report must be submitted in addition to this commissioning verification form.

### Site Information

Project Address	<input type="text"/>
Reference Number (IESO or Other if applicable)	<input type="text"/>
Project Nameplate Capacity [kW]	<input type="text"/>

### Commissioning Test Contact Information

Name	<input type="text"/>
Title	<input type="text"/>
Mailing address	<input type="text"/>
Telephone	<input type="text"/>
Email	<input type="text"/>

### Commissioning Tests

#### 1. Anti-Islanding Test (if applicable):

##### a) Turn Off Utility-Side DG Disconnect:

Verification	Yes/No	Initials	Date	Comments
Did the inverter indicate a loss of the utility grid?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
After a loss of the utility grid, is there voltage on the output of the inverter?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Did the inverter shut down as required?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

##### b) Turn On Utility-Side DG Disconnect:

Verification	Yes/No	Initials	Date	Comments
Did the inverter turn back on upon reconnection with the utility grid?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Did the inverter return to its normal operating state?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

#### 2. WiMax Provision Confirmation (if applicable):

##### a) Provisions for Remote Monitoring:

Verification	Yes/No	Initials	Date	Comments
Does the inverter support multiple masters?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Does the inverter support DNP3 or Modbus over Ethernet?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

b) Provisions for Transfer Trip (if applicable):

Verification	Yes/No	Initials	Date	Comments
Does the inverter support a remote shut down command via the data port	■	■	■	■

### 3. Generator Protective Relay Settings

The inverter-based generator must confirm that the inverter equipment meets the IEEE 1547 over/under frequency and over/under voltage protection requirements indicated below.

a. Over Frequency/Under Frequency Protection:

Table 1 - Over/Under Frequency Protection Set Points and Clearing Times

Generator Size	Frequency Range (Hz)	Clearing Times(s)*
≤ 30 kW	> 60.5	0.16
	< 59.3	0.16
> 30 kW	> 60.5	0.16
	< (59.8 - 57.0) - adjustable	Adjustable - 0.166 to 300
	< 57.0	0.16

Source: IEEE 1547

\*Generators ≤ 30kW - Maximum clearing time

\*Generators > 30kW - Default clearing time

b. Overvoltage/Undervoltage Protection:

Table 2 - Over/Under Voltage Protection Setting and Clearing Time

Voltage Range (% of base voltage)	Clearing Time(s)*
V < 50	0.16
50 ≤ V < 88	2.00
110 < V < 120	1.00
V ≥ 120	0.16

Source: IEEE 1547

\* DG ≤ 30 kW - Maximum clearing time

\* DG > 30 kW - Normal clearing time

By signing this form, the Commissioning Test Representative acknowledges that all required verifications Specified under this commissioning verification form have been completed and inverter equipment meets the IEEE 1547 protection requirements outlined in the Generator Protective Relay Settings section of this document.

As per IESO Market Rules, the DER facility must implement protections that provide ride-through for transmission disturbances. To meet this requirement, the generator must meet the recent standard specifying ride-through such as UL 1741SA, UL1741SB or CSA 22.3 No. 9-2020 and DER inter-tie protection settings shall comply with CSA 22.3 No. 9-2020 as applicable.

The Commissioning Test Representative acknowledges that the embedded generator meets the minimum standards for facility design, construction and operation of generation facilities connected to a distribution system as per the latest revision of the Distribution System Code.

\_\_\_\_\_  
Signature of Commissioning Test Representative (Must be a P.Eng.) (Must affix P.Eng. seal)

\_\_\_\_\_  
Name (Print)

\_\_\_\_\_  
Title

**Return the completed document by email to:  
DER@alecrautilities.com**

**Check List:**

Please ensure the following items are completed prior to submission. Your application will not be processed if any part is omitted or incomplete:

- Commissioning Verification Form, stamped by a Professional Engineer (P.Eng.)
- System Commissioning Report