Commercial Emergency Backup Generation Declaration

About This Declaration

- This declaration form is for emergency backup generators 50kW or larger, whose sole purpose is to supply facility loads when utility power supply is not available.
- Declaring a generator as solely emergency backup may reduce requirements for SCADA monitoring, settlement charges and a connection agreement.
- This form is NOT for generators that may be used for load displacement including global adjustment curtailment and peak shaving.

Important Notes

- Send a copy of this form to **generation@Londonhydro.com**
- Along with this form, the customer shall provide a single line diagram (SLD) of the generating facility including the Interface Point / PCC to London Hydro's distribution system. As well the equipment shall adhere to the requirements listed on page 2.
- This Declaration Form and the associated SLD must be signed and sealed by a licensed Ontario Professional Engineer (P.Eng.).

Periodic testing for Generators greater than 500kW

For closed transition switching (make before break), the proponent must call the London Hydro System Operating Centre (SOC) before disconnection and before reconnection to the grid. (519)-661-5555

Generator Information

Project Location:	Address	City/Town/Township	Postal Code
Nameplate Capacity:	kW	Facility Owner:	
Project Type:	(e.g. diesel engine)	Generator Owner:	

Project Details

Transition Type: ☐ Closed (*"make before break"*) ☐ Open (*"break before make"*)

Transition Time (ms): _____ *(length of time generator remains parallel to the grid)*

Declaration

I certify that the emergency backup generator:

☐ Will only be used for emergency backup of load when utility power supply is not available

☐ Will NOT be used for load displacement (*Including Global Adjustment Curtailment*)

☐ Will NOT operate in parallel with London Hydro's grid for more than 6 cycles (100ms)

☐ Will NOT be operated for any reason other than emergency backup, without first contacting London Hydro

☐ I certify the information provided on and in connection with this form is true, accurate and complete.

☐ If at any future time, the declarations above no longer apply, I shall notify London Hydro immediately and acknowledge that a full Connection Impact Assessment will be conducted and additional requirements may apply.

_____ _____

Signature Date

_____

Name *(Print)*

_____ _____

Title Relation to the generator

_____

P. Eng. (Ontario)

Closed Transition Switching Requirements

1. GENERATORS PARALLELING FOR 6 CYCLES OR LESS (CLOSED TRANSITION SWITCHING)[1]

   i) DG Facilities paralleling for 6 cycles or less shall have the following protections:
      a) Under-voltage protection to ensure that the generator is not capable of energizing London Hydro's Distribution System if it is de-energized; and
      b) A 6 cycle timer to ensure that the DG Facility will not parallel with London Hydro's Distribution System for more than 6 cycles.

   ii) Synchronization facilities, where required, must follow the requirements specified below.

2. SYNCHRONIZATION

   i) Any DG Facility that is capable of generating its own voltage while disconnected from London Hydro's Distribution System shall require proper synchronization facilities before connection is permitted.

   ii) Interconnection shall be prevented if the DG and London Hydro's Distribution System is operating outside the limits specified in Item (iii) below.

   iii) Synchronous generators, self-excited induction generators or inverter-based generators that produce fundamental voltage before the paralleling device is closed shall only parallel with London Hydro's Distribution System when the frequency, voltage, and phase angle differences are within the ranges given below in Table 1 (CSA 22.3 No.9 Table 18) at the moment of synchronization.

Table 1: Resynchronization Requirements

Aggregate Rating of Generators (kVA)	Frequency Difference (Δ f, Hz)	Voltage Difference (ΔV, %)	Phase Angle Difference ($\Delta\Phi$,º)
0-500	0.3	10	20
>500 – 1500	0.2	5	15
>1500	0.1	3	10

*Source: IEEE 1547

   iv) For synchronous generators, an approved automatic synchronization device shall be required if the plant is unattended (IEEE device number 25) to ensure that the DG Facility will not connect to an energized feeder out of synchronism.

   v) Induction generators and inverter-based generators that do not produce fundamental voltage before the paralleling device is closed, and double-fed generators whose excitation is precisely controlled by power electronics to produce a voltage with magnitude, phase angle, and frequency that match those of the distribution system may not require synchronization facilities.

   vi) Any proposed synchronizing scheme shall be submitted to London Hydro prior to installation and shall be able to accommodate automatic reclosing on London Hydro's distribution facilities.

[1] As per CSA 22.3 No.9-20 section 7.4.11 Momentary closed transition switching