BULLETIN

1. *Bulletin ID #:* B-03-DT-10-015.R3

2. Reference Document: "Distributed Generation Technical Interconnection Requirements (TIR) Interconnections at voltages 50 kV and below", *DT-10-015 R3, March 2013,* and all preceding versions - The original document published as *DT-10-015 R0, in November 2009, and revised as DT-10-015 R1, in February 2010 and as revised as DT-10-015 R2 in June 2011.*

3. *Type:* Modification of Section 1.6 and Section 1.*6.*1 *(changes are noted in italics in the modified requirement)*

4. *Release date:* June 24, 2019

5. *Effective date:* June 24, 2019

6. Affected Section of The TIR:
Section 1.6 Capacity Limitations on Generator Interconnections Feeder Loading Limits

7. Existing Requirement

Section 1.6 – CAPACITY LIMITATIONS ON GENERATOR INTERCONNECTIONS FEEDER LOADING LIMITS

The capacity for all sections of all feeders, the "feeder limitation," is based mainly on the distance from Hydro One supply station to the Point of Common Coupling (PCC) of the DG Facility. The feeder limitation applies to all DG Facilities connected or connecting to the feeder and considers the rated output capacity of each DG Facility. Any single DG Facility connection can affect the capacity available for all sections of the feeder.
For all sections of the feeder, the total current shall not exceed:

a) 400 Amps for Hydro One feeders operating at voltages 13kV or greater; and
b) 200 Amps for Hydro One feeders operating at voltages below 13kV.

ACCEPTABLE GENERATION LIMIT AT A TS OR A DS
The acceptable generation limit at a Hydro One TS or a Hydro One DS is established by adding together: 60% of maximum MVA rating of the single transformer and the minimum station load.

SHORT CIRCUIT (SC) LIMITS
The SC limits at TS low voltage bus or at any portion of distribution feeder shall not be exceeded by the addition of DG Facilities. Refer to Section 2.1.16 for the requirement.

Section 1.6.1 – THREE PHASE GENERATORS

i) The acceptable individual generation limits for three-phase DG Facilities connecting to Hydro One's Distribution System feeders shall not exceed:

a) 1 MW per connection on feeders operating at voltages below 13kV; and
b) 5 MW per connection on 27.6kV feeders supplied via a 44kV:27.6kV step-down transformer.

ii) The feeder limitation determines the total acceptable three-phase generation allowed for all sections of Hydro One's Distribution System feeders and shall not exceed:

a) 30 MW for feeders operating at 44kV;
b) 19 MW for feeders operating at 27.6kV;
c) 9.6 MW for feeders operating at 13.8kV;
d) 4.3 MW for feeders operating at 12.48kV;
e) 2.9 MW for feeders operating at 8.32kV; and
f) 1.45 MW for feeders operating at 4.16kV.

8. Modified Requirement

Section 1.6 – CAPACITY LIMITATIONS ON GENERATOR INTERCONNECTIONS FEEDER LOADING LIMITS

The capacity for all sections of all feeders, the "feeder limitation," is based mainly on the distance from Hydro One supply station to the Point of Common Coupling (PCC) of the DG Facility. The feeder limitation applies to all DG Facilities that supply power into Hydro One's Distribution System ("exporting DG Facility"). The feeder limitation considers the rated output capacity of each of the exporting DG Facilities, connected or connecting. Any single *exporting* DG Facility connection can affect the capacity available for all sections of the feeder.

Feeder limitations do not apply to non-exporting DG Facilities. A non-exporting DG Facility is where the sole purpose of electricity generation at the site is to supply the load at the same PCC as the DG Facility and where under no circumstances the DG Facility will be operated in such a way to supply power into Hydro One's Distribution System at any time.
DG Facilities include Distributed Energy Resources (DER) such as load displacement generation and energy storage systems.

For all sections of the feeder, the total current from *exporting* DG Facilities shall not exceed:

a) 400 Amps for Hydro One feeders operating at voltages 13kV or greater; and
b) 200 Amps for Hydro One feeders operating at voltages below 13kV.

ACCEPTABLE GENERATION LIMIT AT A TS OR A DS

The acceptable generation limit *(includes exporting and non-exporting generation)* at a Hydro One TS or a Hydro One DS is established by adding together: 60% of maximum MVA rating of the single transformer and the minimum station load.

SHORT CIRCUIT (SC) LIMITS

The SC limits at TS low voltage bus or at any portion of distribution feeder shall not be exceeded by the addition of DG Facilities. Refer to Section 2.1.16 for the requirement.

Section 1.6.1 – THREE PHASE GENERATORS

i) The acceptable individual generation limits for three-phase DG Facilities connecting to Hydro One's Distribution System feeders shall not exceed:

a) 1 MW per connection on feeders operating at voltages below 13kV; and
b) 5 MW per connection on 27.6kV feeders supplied via a 44kV:27.6kV step-down transformer.

ii) The feeder limitation determines the total acceptable *exporting* three-phase generation allowed for all sections of Hydro One's Distribution System feeders and shall not exceed:

a) 30 MW for feeders operating at 44kV;
b) 19 MW for feeders operating at 27.6kV;
c) 9.6 MW for feeders operating at 13.8kV;
d) 4.3 MW for feeders operating at 12.48kV;
e) 2.9 MW for feeders operating at 8.32kV; and
f) 1.45 MW for feeders operating at 4.16kV.

Note: While the absolute limits are stated above, the actual acceptable individual generation limit for specific feeders or TS/DS is determined in Connection Impact Assessment (CIA).

9. Background and Reason:

Feeder limitations for DG Facilities were established based on the same principles that were used to establish the long standing Planned Loading Limits (PLL) for load Customers. These limits ensure reliability and operability especially in contingency situations.

Having reviewed the generation and loading data of the past several years, the feeder limitations and underlying reasoning have been validated. Moving forward, based on this validation and in combination with Hydro One's recent implemented and planned distribution automation and monitoring upgrades, there is opportunity to update the feeder limitations, recognizing the new capabilities of these new automation and monitoring technologies. These automation and monitoring upgrades will allow Hydro One to maintain the same level of reliability and operability while increasing the amount of DG Facilities that Hydro One is able to connect.

If you have questions related to this bulletin, please contact:

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