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Power to Ontario.
On Demand.

Non-Blondel MEC Consideration

Revenue Metering Standing Committee
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Non-Blondel MI's & Non-Blondel MEC

4.3.3 Considerations for Installations that do not Conform to Blondel's Theorem

Subject to specific site approval by the *IESO*, as detailed in section 4.4, the following Non-Blondel-Compliant installations will be considered for registration:

a. two and one-half element *metering installations* — using three current transformers, two voltage transformers connected phase to ground and a two and one-half element *meter*;

b. two and one-half element *metering installations* — using three delta connected current transformers, two voltage transformers connected phase to ground and a two-element *meter*;

c. delta metering of transmission or distribution circuits — using two current transformers, three voltage transformers connected phase to ground with 69V secondaries and a two-element *meter*; and

d. two-element *metering installation* located at the transformer station where the power system neutral/ground is available but not used — using two current transformers and two voltage transformers connected phase to phase and a two-element *meter*.

e. two-element metering of a *generation facility* where a grounded *generation facility* is connected to a grounded winding of the step up power transformer. The *metering installation* is located between the *generation facility* and the step up power transformer. All load connections between the *generation facility* and the *metering installation* are delta connected – using two current transformers and two voltage transformers connected phase to phase and a two-element *meter*.

4.4.2 Non-Blondel Metering Requirements

The requirements for registration are:

a. the magnitude of maximum error shall be determined and submitted to the *IESO* for approval;

b. where the maximum error can be shown to be less than 0.2% for both active and reactive power, the installation shall be approved the *IESO* without a correction factor; and

c. where the maximum error exceeds 0.2%, the *IESO* may grant approval to continue to use the existing metering and apply a fixed correction factor to the *metering data*.

Non-Blondel MEC

- MEC calculation required to confirm error
  - Requires power system study
  - In some instances, worst case assumptions are made
- Approximately 135 non-Blondel installations registered under the Alternative Metering Installation Standard
- 125 have error less than 0.2% (no correction required)
- 10 have error > 0.2% but < 0.3% (non-Blondel MEC applied)

Non-Blondel MEC con't

- Do we need to revisit the requirements for performing a non-Blondel MEC calculation?
  - 4.3.3c does not require a calculation in some cases
    - ✓ Where the *metering installation* is located on the high voltage delta connected winding of a power transformer above 50 kV, it is considered as accurate as a two element *metering installation* using two current transformers, two phase-to-phase connected voltage transformers and a two element *meter* at the same location. As a result, the non-Blondel correction factor is 1.0000
- Can the same apply for some cases of 4.3.3d?
  - WYE grounded transformer supplying delta load with 2 element meter where MMP identifies all load connections
- Does this warrant consideration?
  - Will need to work with MSP's to detail supporting information