

Non-Blondel MEC – Future Baseline Proposal

Revenue Metering Sub-Committee Meeting

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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*.

q Market Manual 3.4, Measurement Error Correction, section B.4.3 details how non-Blondel MEC is to be calculated

q Details for condition 4.3.3c needs to be expanded

- q Used in two different applications:
- q Case 1: HV metering installation metering a WYE grounded power transformer using two current transformers, three voltage transformers connected phase to ground with 69V secondaries and a 2 element meter
- q Case 2: HV metering installation metering a DELTA connected power transformer using two current transformers, three voltage transformers connected phase to ground with 69V secondaries and a 2 element meter
- q Case 1 is non-Blondel due to missing element
- q Case 2 is non-Blondel due to VT configuration (2 element metering installation requires phase-phase connected VT's)
- q MM 3.4, section B.4.3 addresses case 1
- q MM 3.4, section B.4.3 does not address case 2

- q Is a non-Blondel MEC required?
- q 0.3 VT's are very accurate
- q When used in this configuration, can the error be considered negligible? If not, require IT test cards to calculate true error.
- q Can we state:
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.
- q Does the RMSC agree with this proposed change?