

Measuring Low Loads at Generating Facilities

Generating Facilities

- Metering installation sized for Generator Capacity
- Station Services typically less than 10% of Generator Capacity
- Issue: The minimum sustained primary current during normal operation is less than 10% of the primary tap for ANSI 0.3 accuracy class.

Meter Installation Design Considerations

1. Extend the CT operating range by incorporating the continuous current rating factor.
2. Use 'High Accuracy CT's – 0.15B1.8'. Factory Test Card indicates error down to 1% of nominal rating. Typically 0.3% from 1%-5% nominal and 0.15% from 5%-nominal*RF

Example

- Metered load is 360A received and 12A delivered
- 400:5 CT is oversized for the delivered load (operating range of CT is 40A to 400A)
- Using 200:5 CT with RF 2.0, the operating range is 20A to 400A
- Using high accuracy 200:5 CT (0.15B2.0) with RF 2.0, the operating range is 20A to 400A. Factory Test Card indicates CT error between 2A and 20A is less than 1.003/0.997. MEC of 1.0 applied.

Summary

- Incorporating RF and using high accuracy CT's may resolve issues related to the operating range of the meter installation.
- The only other option is to individually meter the generator and load.
- How is MEC applied when error between 1% and 10% is greater than $1.006/0.994$? Is it applied only to the delivered channels?