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Instrument Transformers Testing Services

Ensure Safety, Reliability and Revenue Security

Metering class instrument transformers (ITs) are high accuracy devices that step-down primary system quantities, such as voltage and current, to safe values that can be read by power meters for energy revenue settlement.

As with every power system component, ITs require regular maintenance and should be periodically tested to verify functionality and assess the health of the insulation.

Defective ITs can cause erroneous billing or can catastrophically fail, causing unplanned system outages.



Requirements for IT Testing

The Independent Electricity System Operator (IESO), and other ISOs, require market participants to perform checks and inspections on all wholesale metering installations, including ITs. The Canadian Standards Association provides a maintenance guideline that recommends minimal testing intervals in the range between 1 to 3 years, depending on the type of test.

Rodan Energy will align these tests with your regular protection and control maintenance schedules and asset management programs.

Why Regular Maintenance Testing is Imperative

Over time, problems can occur inside the IT, such as shorts between windings or degradation in the connections. For these reasons, a maintenance schedule should be in place to test the condition and accuracy of an IT periodically.

1. Assess the condition of the IT. Any electrical device that is continuously energized has a certain life expectancy before its insulation breaks down and fails. Condition assessment is used to evaluate the overall health of the IT insulation and track it over time to confirm that the integrity of the insulation is maintained.
2. Verify that the IT accuracy is still operating within an acceptable range. If the accuracy is compromised, then so are the revenue metering and settlement.

The types of testing performed are:

- Overall instrument transformer insulation tests
- Current transformer-specific tests:
Ratio error; Winding resistance; Polarity
- Power factor and capacitance tests
- Voltage transformer-specific tests:
Ratio error; Polarity

