



## Recommended Testing—Multi-Tap Rental Duty Transformers

From the factory, all VanTran transformers are thoroughly tested to current ANSI and NEMA standards, which include the following routine tests:

- Resistance Measurements
- Polarity and Phase-Relation Tests
- Ratio Tests (TTR—Transformer Turns Ratio)
- No-Load Losses and Excitation Current
- Impedance and Load Losses\*
- Dielectric Tests
  - Applied Potential
  - Induced Potential
  - DC Leakage Test

Although VanTran Industries does not know of any specific tests that can definitively determine if damage has occurred to a unit, there are a few tests that can be used on a routine basis to gain insight on internal conditions

The most valuable test VanTran performs on older units, and one that we recommend at minimum, is a TTR. Repeated uses of a TTR test should give testing personnel a good indication on the “health” of the unit and can determine failed components or connections inside the unit.

Visual inspections should also be performed with careful attention given to the bushings. Any sign of overheating and discoloration can be an indication that the rated kVA capacity has been exceeded.

Along with regular TTR tests and visual inspections, VanTran recommends repeated and documented resistance readings if access to the equipment is available so that baseline measurements can be established. Fluctuations in temperature and other factors will cause variances in resistance readings, but abrupt changes from baseline measurements can indicate internal component damage or failure.

Routine “Megger” tests are also recommended if access to this equipment is available. Routine Megger tests can give insight into the condition of the insulation and presence of moisture within the unit.

As with any transformer, annual or quarterly oil samples should be drawn and tested for dielectric strength and Dissolved Gas Analysis (DGA). DGA results and baseline measurements can offer long-term insight into the condition of your unit.