

Stator Bars & Coils

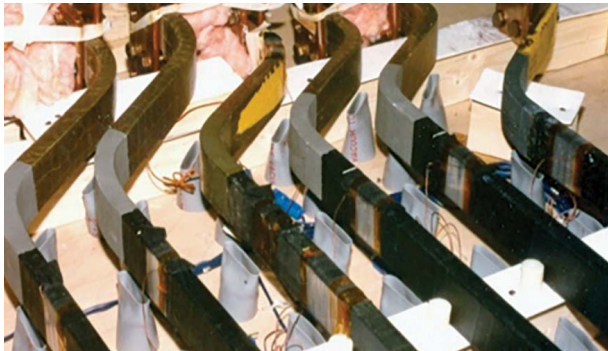




Stator coil being prepared for voltage endurance testing.

Stator Bars & Coils

Stator bars and coils are integral elements of a rotating machine. Accelerated aging and diagnostic tests performed on stator bars and coils ensure the electrical insulation meets requirements for quality and reliability. Testing reduces safety hazards and helps prevent system outages and their accompanying repairs and replacement costs.



Stator bars set up for thermal cycling.

Manitoba Hydro International Ltd. (MHI) offers a range of accelerated aging and diagnostic tests for stator bars and coils including:

- Thermal cycling, IEEE 1310;
- Voltage endurance, IEEE 1043/1553;
- Partial discharge, IEEE 1434;
- Surge test, IEEE 522;
- Capacitance and dissipation factor, IEEE 286;
- Surface resistance measurement;
- Dimensional measurement;
- Delamination/tap test;
- Failure dissection analysis;
- Burnout/measure of inorganic content.



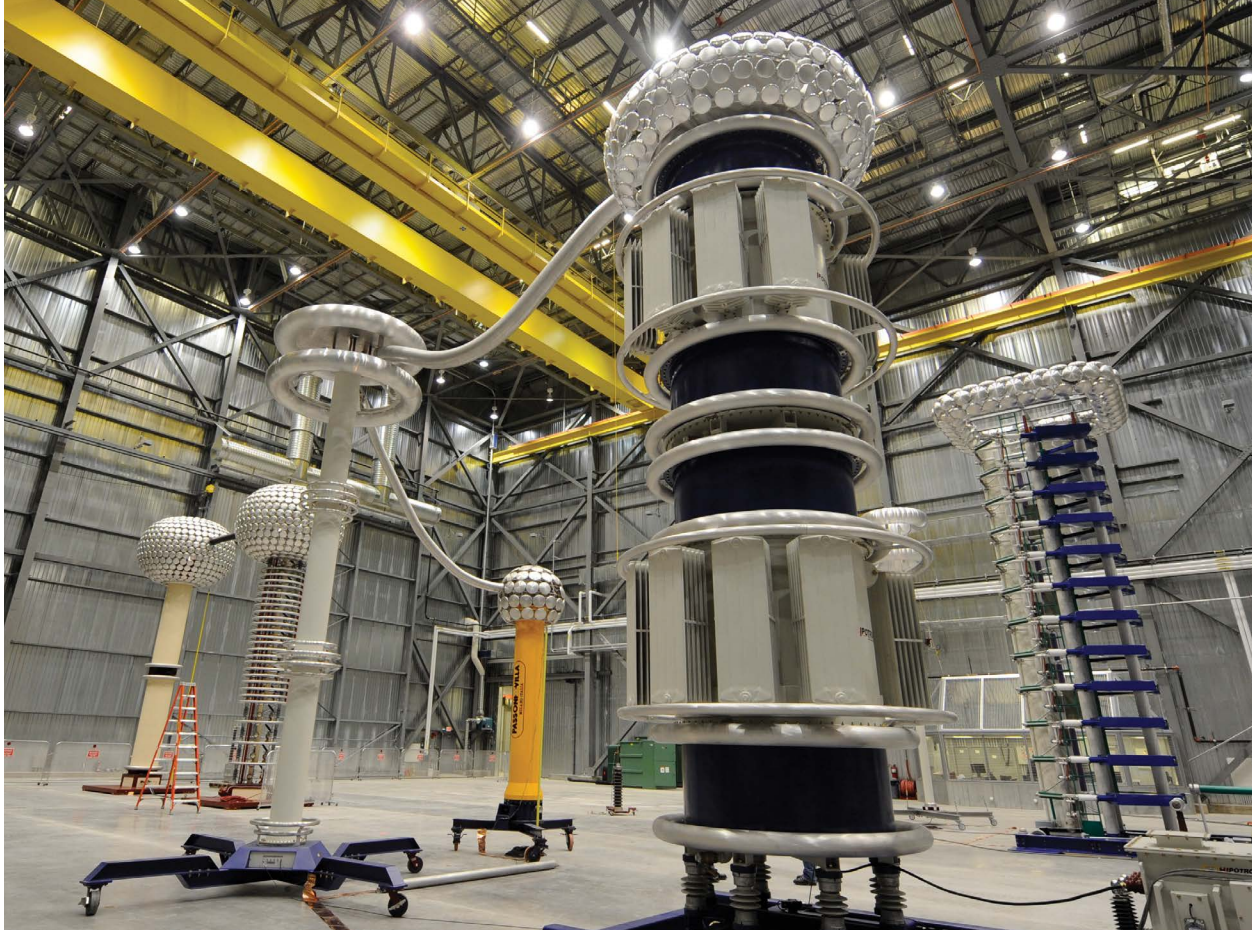
Infrared imaging of stator bars during voltage endurance testing.

Standards

We offer stator bar and coil tests compliant with the following standards:

- **IEEE Std 1310-2012** - IEEE Recommended Practice for Thermal Cycle Testing of Form-Wound Stator Bars and Coils for Large Rotating Machines.
- **IEEE Std 1043-1996** - IEEE Recommended Practice for Voltage-Endurance Testing of Form-Wound Bars and Coils.
- **IEEE Std 1553-2002** - IEEE Standard for Voltage Endurance Testing of Form-Wound Coils and Bars for Hydrogenerators.
- **IEEE Std 522-2004** - IEEE Guide for Testing Turn Insulation of Form-Wound Stator Coils for Alternating-Current Electric Machines.
- **IEEE Std 286-2000** - IEEE Recommended Practice for Measurement of Power Factor Tip-Up of Electric Machinery Stator Coil Insulation.
- **IEEE Std 1434-2014** - IEEE Guide for the Measurement of Partial Discharges in AC Electric Machinery.

Test Capabilities for Stator Bars & Coils	
Capabilities	Rating
Thermal Cycling	6,000 A, 50 V, 60Hz
Voltage Endurance	50kV, 50Hz-400Hz



High Voltage Test Services

In partnership with Manitoba Hydro's High Voltage Test Facility, we provide commercial testing services for a wide variety of high voltage electrical equipment rated up to 550 kVac and 500 kVdc. All testing is performed at Manitoba Hydro's leading-edge facility, where services are tailored to meet each customer's specialized needs in accordance with IEEE, ANSI, IEC, and CSA standards.

Contact us today to discuss your testing requirements:

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mhi.ca

Available in accessible formats upon request.

