HydroCoil™

Stator Coils designed to increase hydro generator reliability

- Patented IPS technology
- Available up to 15 kV & 50 MW
- Exceeds IEEE 1553-2002 Voltage Endurance for Hydro Generators
- Exceeds IEEE 1147-2005 Rehabilitation of Hydro Plants
- Industry-leading coil Mica density (g/cm3)
- Industry-leading coil dielectrics (V/mil)
- Engineering – Generator uprates & stator coil design
- Experienced on-site rewind technicians

**Best-in-class hydro generator rewinds**

HydroCoil is our premium, B-stage, resin-rich stator coil offering for hydro generator rewinds up to up to 15 kV and 50 MW. It was developed by hydro utility and IPS engineers to maximize stator winding reliability and exceed IEEE 1553-2002 and IEEE 1147-2005 hydro industry testing and rehabilitation standards.

The HydroCoil is custom engineered and employs advanced resin-rich tapes and processing methods for enhanced thermal cycling and improved dielectrics. The processing methods are optimized to increase ground wall density and ensure complete resin migration. The design and engineering combine to create a void-free coil, preventing delamination and any microvoids that can result in partial discharge activity and subsequent insulation deterioration. These fully cured and homogenized coils also prevent shrinkage, which means no re-wedging is required.

The HydroCoil’s improved dielectrics and thermal dissipation means hydro generator rewinds can typically offer an increase in generator rating, permitting higher output power generation levels.
Industry-Leading Qualification Testing

During testing for thermal cycling and thermal aging, the HydroCoil exhibited superior mechanical properties and thermal dissipation characteristics. The coils also exceeded all industry standards for voltage endurance testing. An independent 3rd party was used for verification testing, and the HydroCoil successfully completed the following tests:

- IEEE 1310 Thermal Cycling
  - 500 Cycles X 90 minutes, 40°C - 155°C
- IEEE 1043 Voltage Endurance
  - 400 Hours @ 30 kV
  - 250 Hours @ 35 kV
- IEEE 1776-2008 Water Immersion at 15 kV
- IEEE 95 Hi Pot Test to 70 kV
- IEEE 286 Power Factor Tip Up
- IEEE 1434 Partial Discharge
- IEEE 522 Surge Test to 40 kV