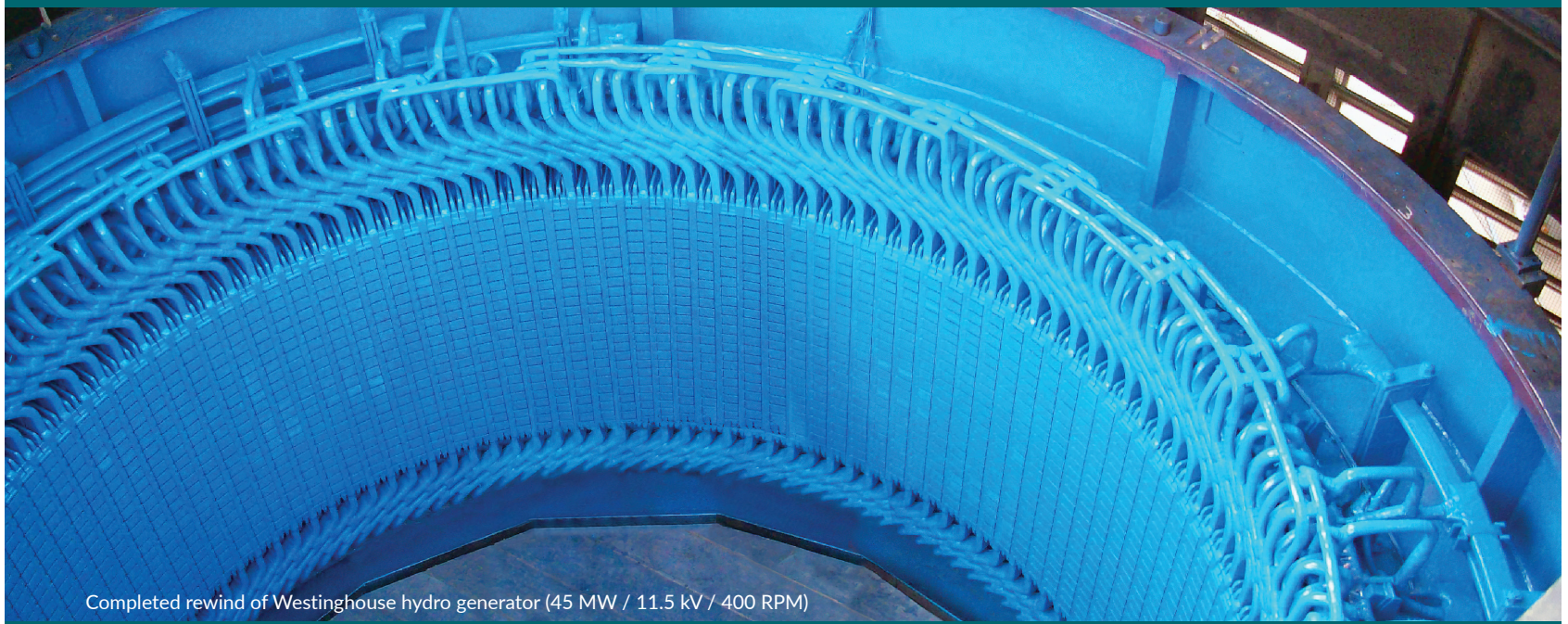




Completed rewind of Westinghouse hydro generator (45 MW / 11.5 kV / 400 RPM)

Stator Coils Designed to Increase Hydro Generator Reliability

We offer cryogenic blasting, or dry ice cleaning, at all IPS Service Centers. This method simply blows away traditional cleaning methods,

including other blast media and solvents. Our Field Service Specialists recommend IPS Cryogenic Blasting to remove contaminants, deposits and waste buildup from a wide range of motors and mechanical components.

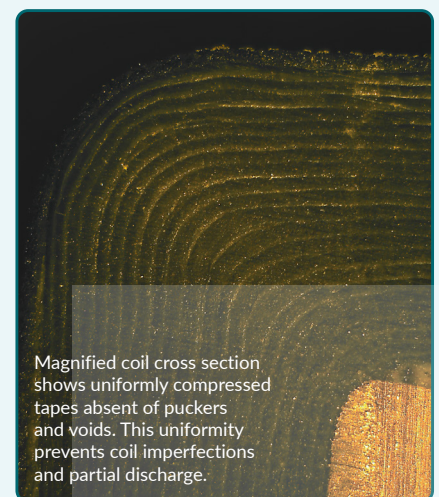
Because the CO₂ pellets change from solid to gas upon impact, for removal by ventilation hoses, IPS Cryogenic Blasting is non-toxic and eliminates waste disposal. It's also non-abrasive—precise enough to clean circuits and control panels, but strong enough to clean windings without damaging insulation. And since it's non-conductive, it requires no time-consuming prep work.

Unlike sand, glass beads or other blast media, CO₂ works on multiple levels, combining the kinetic energy of pressurization with thermal action and molecular expansion. Blasting changes the temperature between the contaminant and substrate, while the CO₂ molecules increase in size as they change from solid to gas. Together, these forces accelerate the cleaning process, while greatly reducing preparation and cleanup time.

IPS Cryogenic Blasting is ideal for all of your motor and mechanical cleaning requirements. To turn the clock back on your oldest, more contaminated assets—with the most cost-efficient blasting technology available today—visit us at www.ips.us. Or talk to your IPS sales representative. The results will blow you away.

Advantages of HydroCoil:

- ✓ 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

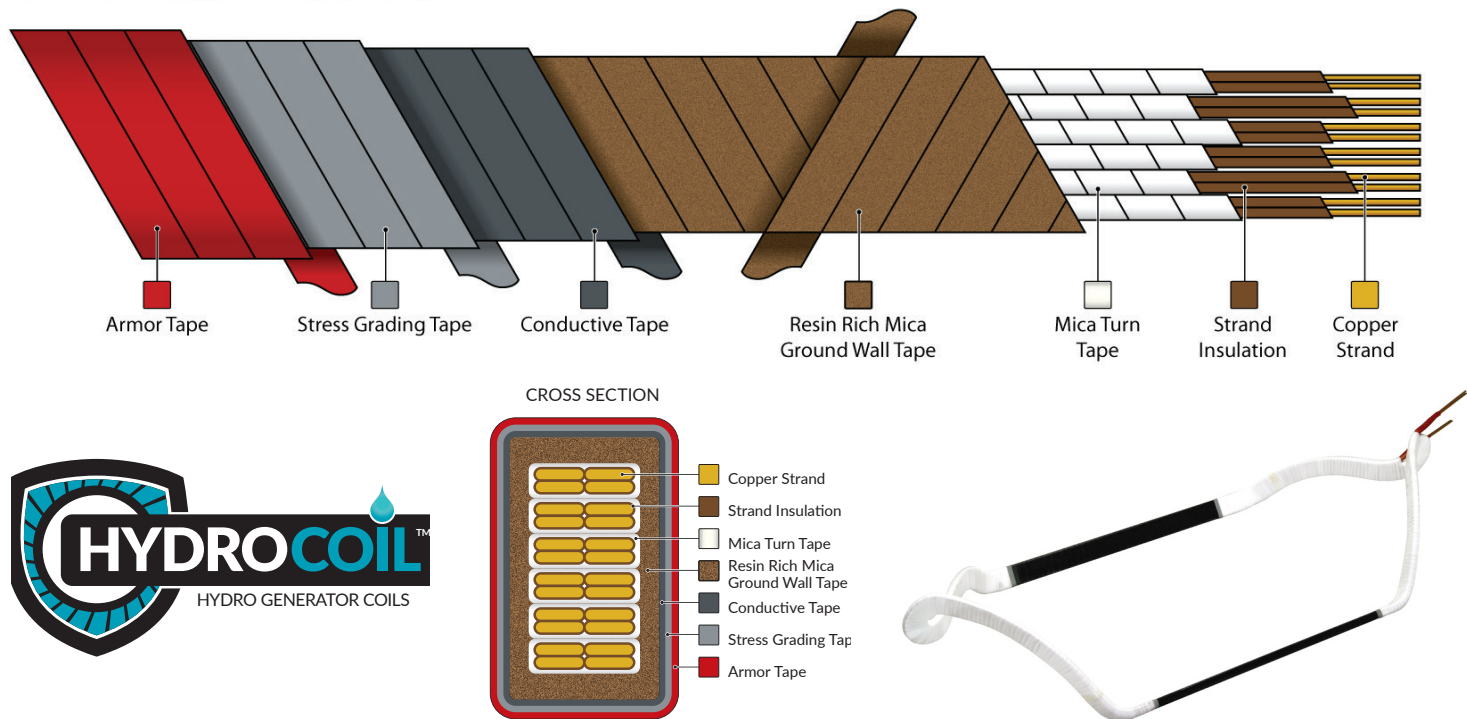


Magnified coil cross section shows uniformly compressed tapes absent of pucks and voids. This uniformity prevents coil imperfections and partial discharge.

For more information, visit: www.ips.us/industries/hydroelectric-power/

HYDROCOIL STATOR COILS

Resin Rich B-Stage Coils (up to 15kV)



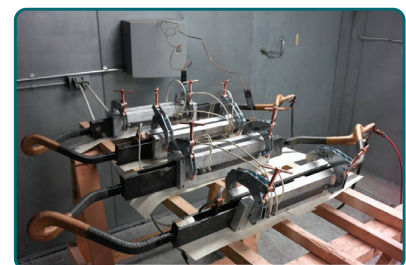
INDUSTRY-LEADING QUALIFICATION TESTING

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



IEEE 1310 Thermal Cycling life test



IEEE 1043 Voltage Endurance life test



Increase your hydroelectric power and reliability with our single-source solutions. To learn more, talk to your regional IPS sales representative or visit: www.ips.us/industries/hydroelectric-power/