Nuclear Service
One Standard For Safety, Quality and Repair

INTEGRATED POWER SERVICES
RELIABILITY. DELIVERED.

IPS NUCLEAR SERVICE
RELIABILITY. DELIVERED.
IPS offers safety and non-safety related nuclear motor repair services, including radiologically contaminated motors, through its Cleveland and Shreveport Nuclear Repair Service Centers. Both locations comply with applicable federal regulations and nuclear standards, including 10CFR50 Appendix B and ANSI N45.2, as well as 10CFR21.

The IPS Nuclear Services Quality Assurance Program offers one standard for safety, quality and repairs at both service centers, allowing IPS to service utilities with multiple nuclear power plants to the same standards and specifications from either service center. IPS nuclear repair services in Cleveland and Shreveport are accessible through any IPS Regional Service Center across North America.

Approved Vendors List

The Cleveland and Shreveport Nuclear Repair Service Centers have successfully completed multiple quality audits based on the NUPIC checklist. Both service centers are on the Approved Vendors List at numerous nuclear utilities.
A programmatic focus on quality

Our Nuclear Services Quality Assurance Program complies with 10CFR50 Appendix B and ANSI N45.2, as well as the 10CFR21 requirements for evaluating and reporting defects and noncompliance. Our corporate Quality Assurance Manager, Heath Safety & Environmental (HSE) Manager, and Continuous Improvement Process Solution (CIPS) Manager work as a team with the Quality Assurance, Safety and CIPS managers at our nuclear repair centers in Cleveland and Shreveport. This team drives standardization and best practices in our nuclear repair processes for consistent and reliable repairs, and ensures compliance of all aspects of our Nuclear Services Quality Assurance Program, including foreign material exclusion (FME) and commercial grade dedication.

Regular customer audits and internal audits demonstrate that IPS offers industry-leading quality, safety and lead times. Customer specification and quality requirements serve as a benchmark for our quality practices – we welcome customer and independent third-party compliance audits concerning our overall performance.

CIPS – Continuous Improvement Process Solution

IPS has adopted Six Sigma principles and implemented CIPS, our continuous improvement culture, at each of our service centers. CIPS adds value to our services by improving safety, quality, reliability and delivery. Our employees drive CIPS and its principles throughout the business, sales and operations processes.

By eliminating waste in our processes and improving our use of space and inventories, work moves through our regional service centers faster. CIPS reduces the number of material moves and lifts, which has a direct effect on improving safety and quality, while providing technicians more time to add value. The objective is to combine the highest possible level of safety, quality and reliability with lead times the competition can’t match.

IPS Advantages

- Multi-location 10CFR50 Appendix B and 10CFR21 programs
- Unified Safety, Quality and CIPS culture
- Engineered insulation systems to 15 kV
- Proprietary VPI and B-Stage stator coil designs up to 15 kV
- IEEE 1776-2008 underwater AC Hi Pot to 13.8 kV
- Experienced field service department
- Decontamination services and contaminated equipment repair available
- Dedicated motor storage facilities

IPS Nuclear Repair Service Centers in Cleveland and Shreveport have dedicated clean rooms for winding and repairing nuclear motors, applying best practices for Foreign Material Exclusion (FME)
IPS combines the engineering, repair experience and technologies you need for your safety- and non-safety related electric motors and generators. Simply put, IPS is focused on providing the best ways to engineer, remanufacture, repair, rewind and test your nuclear rotating equipment.

**Foreign Material Exclusion (FME)**

Our Cleveland and Shreveport nuclear repair centers are focused on the prevention of uncontrolled introduction of foreign material into your repaired equipment. The IPS Nuclear Quality Assurance Program establishes controls for preventing contaminants and unauthorized components, as well as requirements for maintaining cleanliness at both of our nuclear repair facilities. Our culture of continuous improvement drives our employees to develop best practices for FME.

**Commercial-grade dedication**

We perform commercial-grade dedication of replacement components for motors and generators through a program of tests, inspections, audits and surveillance, as well as the use of audited 10CFR50 Appendix B third-party services. The IPS commercial-grade dedication program is modeled after EPRI NP-5652.

**Comprehensive testing**

IPS uses the industry's most advanced diagnostics to validate repair requirements, document "as shipped" performance, and support one service standard coast to coast. Our capabilities include the first-ever 13.8 kV AC underwater hi-pot test in the U.S. per IEEE 1776-2008 specifications.
IPS proprietary VPI and B-Stage stator coils are designed to mitigate electrical, thermal, mechanical and environmental winding stresses.

Premium engineered rewind technologies

IPS engineered insulation systems are designed for the most demanding severe-duty, continuous process applications. Our rewind technologies are available with motor redesigns or uprates. Our engineered insulation systems include:

- PowerSeal™ VPI engineered insulation systems up to 7.2 kV
- MegaSeal™ VPI engineered insulation systems from 6.6–15 kV
- IntegraCoil™ B-stage coils up to 15 kV

Coil Cross Section – PowerSeal and MegaSeal VPI technology completely penetrates and encapsulates magnet wire and insulating tape in epoxy resin as a solid, impenetrable mass

MegaSeal VPI high-voltage rewind of circulating water pump motor (3,500 HP / 13.8 kV / 327 RPM)

Stator coils designed to withstand the stress of severe applications

IPS engineers have developed patented global VPI electrical insulation systems and B-Stage stator coil technologies that exceed industry design standards for electric motor and generator reliability. Our PowerSeal and MegaSeal medium- and high-voltage global VPI rewinds come standard with an industry leading 5 year warranty. Our IntegraCoil B-Stage Hard Coils are ideal for on-site rewinds and for stators too large to fit in our largest 14' diameter VPI tank.

MegaSeal™

VPI Engineered Insulation System (6.6kV - 15kV)

IPS proprietary VPI and B-Stage stator coils are designed to mitigate electrical, thermal, mechanical and environmental winding stresses.
Nuclear Repair Services

Engineering Reliability, Industry-Leading Experience and Technology

Nuclear Hermetic Motor Service

IPS provides nuclear motor repair for hermetic chiller motors up to 6.6 kV at its Cleveland and Shreveport nuclear repair centers. Both locations have extensive experience with safety and non-safety related nuclear motors. Hermetic rewinds are performed in dedicated winding clean rooms, applying best practices and Foreign Material Exclusion (FME) program.

PowerSeal™, the IPS VPI medium-voltage engineered insulation system, provides you the industry’s best rewind technology for motors up to 7.2 kV. Our rewind process and all materials for hermetic repair are UL-approved and tested for oil and refrigerant compatibility. Our insulation systems were approved using accelerated life and aging test methods, including extractables, wet absorption, Parr Bomb, bond strength retention, twisted pair dielectric breakdown, dissipation factor, IEEE 1310 Thermal Cycling, IEEE 1043 Voltage Endurance and IEEE 1776-2008 Water Immersion.

IPS also draws on extensive experience, OEM design and manufacturing data with hermetic motor repairs from its history as a part of Reliance Electric, industry-leading supplier of hermetic motors to the industry.

Radiologically contaminated equipment

IPS partners with selected U.S. companies to decontaminate motors to free-release condition for repair and rewind. When motors can’t be free released, IPS service technicians repair and/or rewind the apparatus in its contaminated state.

Decontamination of a 8,000 HP / 15 kV / 1,800 RPM reactor recirculation pump motor performed at our partner’s facility
Motor Circuit Evaluation (MCE)

Predictive and preventive maintenance
We prefer an all-inclusive approach to testing, using complementary technologies to baseline equipment and establish maintenance recommendations. IPS field services can help you migrate from a reactive, repair-focused environment to a managed, condition-based program.

- Vibration analysis
- Motor Circuit Evaluation
- Doble® testing
- Partial discharge testing
- Operational Deflection Mode Shape
- Thermography
- Ultrasonic testing
- Motor Efficiency
- Laser alignment
- Current analysis trending
- Equipment inspections

IPS stocks new motors from fractional up to 2,500 HP

IPS offers commercial grade motors and spare parts dedicated for safety-related use. IPS motor services include drop-in replacements, modifications and reverse engineering with remanufacturing. We will make sure you get what you need in a timely manner.

Motor storage and maintenance programs
IPS offers professional long term storage and asset management programs for both safety and non-safety related motors and generators. IPS can manage and maintain your spare motors and generators to ensure reliability and up-time availability for lower maintenance costs. These warehouses feature up to 55-ton lifting capacity, plus temperature- and humidity-controlled environments. They are free of low-frequency vibrations to protect bearings and offer 24/7 on-call service for timely shipment.
Your Single Source for Nuclear Repair Services, Field Services and Distribution Sales

IPS is a leading power services company, providing premium-quality motor, generator and mechanical services on all OEM brands to a wide range of customers. We are also an authorized reseller and distributor for leading OEMs.

IPS regional service centers give you 24/7 dependability, with trained professionals offering years of experience in your industry. They are backed by unmatched technical resources and capabilities, plus a network for North American coverage and documented standards for workmanship and materials.

To explore your options, talk to your regional IPS sales engineer or visit www.ips.us/nuclear