Wind Power Services

One Standard for Safety, Quality & Repairs
– Across North America
Leveraging IPS Quality Leadership Across North America.

Working closely with wind power OEMs and wind farm owners and operators, IPS relies on innovative in-shop and up-tower processes to increase reliability and minimize downtime.

IPS continues to define and document best practices and OEM repair standards, drawing on long-established relationships with wind power customers and industry OEMs. We offer single-source capabilities, including electrical and mechanical repair, exclusive rewind technologies, coil manufacturing, testing and machining capabilities.

Electrical repair
- Authorized OEM repair
- Wind generators up to 3+ MW
- Motors
  - Pitch and yaw
  - Cooling fans
  - Hydraulic pumps
  - Electronic boards

Mechanical repair
- Authorized OEM repair
- Wind gearboxes
- Wind turbine main shafts
- Slip rings
- Heat exchangers
- Generator and gearbox housings

Coil manufacturing
- Random-wound coils up to 2 meters

Premium VPI insulation systems
- MegaSeal™ HV (up to 15 kV)
- PowerSeal™ MV (up to 7.2 kV)

In–house machining capabilities
- CNC precision-machined parts
- 145-ton lifting capacity
- Lathe: to 76” x 564” and 126” x 384”
- Vertical, horizontal and planer milling
- Pressing up to 600 tons

Dedicated truck fleet for North American delivery
ELECTRICAL REPAIRS

- Random- and form-wound stator rewinds
- Rotor rewinds
- Pitch, yaw, cooling fan and hydraulic pump motors

COIL MANUFACTURING

- Extensive experience in coil manufacturing
- Random-wound coils up to 2 meters
- Exclusive, premium VPI insulation systems

MECHANICAL REPAIRS

- Main shaft repair
- Gearbox repair
- Slip ring repair
Up-Tower Field Services
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Safety First
IPS maintains a strong corporate commitment to a safe work environment, with a dedicated Health, Safety and Environmental Manager overseeing one safety standard for all locations across North America. Our policy is to exceed all federal and state safety regulations—our Experience Modification Ratio (EMR) is well below the industry average.

Up-tower safety training includes:
- Fall protection
- Blood Born Pathogens
- Tractel
- Fire Extinguisher
- NFPA 70E
- CPR and First Aid training
- Lockout Tagout (LOTO)
- OSHA 10

Industry-leading experience and capabilities
IPS leads the industry in up-tower services. We’ve done thousands of bearing and slip ring replacements, and offer a full range of predictive and preventive maintenance services. Our technicians have developed innovative skills and technologies to keep the work up-tower—we’re experienced at moving heavyweight couplings, end bells, slip rings and doing precision machine work inside the nacelle. Our experience covers virtually every brand and size of wind turbine and our capabilities include the following:

General services and capabilities
- Wye ring replacement
- Generator shaft repair/field machining
- Rotor lead change outs
- Bearing change outs and upgrades
- Slip ring change outs and upgrades
- Brush holder upgrades
- Wind generator and gearbox repair
- Gearbox oil changes
- Grounding system upgrades
- Housing and component rebuilds
- General labor and maintenance
- Coupling replacement
- Hub slip ring tube seal replacement
- Slip ring rebuilds and manufacturing
- Torque services
- Crane services

Predictive and Preventive Maintenance
- Laser Alignment
- Vibration and Modal Analysis
- Thermography
- Bore Scoping

Diagnostic testing
- Baker Surge Test
- Motor Circuit Evaluation (MCE)
- Doble®
- Partial Discharge

Our objective is to do as much as we can up-tower, safely and efficiently, to minimize downtime and lost revenue.
Pre end-of-warranty inspections to detect and address:
- Imbalance
- Misalignment
- Mechanical looseness
- Rotor eccentricity
- Shaft bends
- Lubrication condition
- Bearings
- Gears and gearbox problems
- Generator faults
- Rubbing
- Natural frequency and resonance

Fast mobilization and minimal downtime on the following:
- Gearbox flush and oil change
- Up-tower bearing changes
- Coupling replacement
- Hub slip ring tube seal replacement
- Torque services
- Crane services
- 24/7 emergency repairs
- Bore scoping
- Vibration and modal analysis
- Laser alignment
- Thermography

Our technicians are trained for generator replacements. In addition, our generator unit exchange program cuts downtime and crane costs.

North American Coverage
One of the advantages of our North American footprint is rapid response times for service. We have fully equipped field service trucks located across the country for rapid response, on-site and up-tower. In addition, each of our regional service centers has its own fleet of trucks for on-site pickup and delivery, working closely with site supervisors on scheduling times to meet the crane at the tower (saving downtime and extra handling of the generators).
Stock products and parts

We have ready-to-ship OEM parts and products to serve our wind power customers, along with replacement parts and metric motors for many wind turbine applications. Our inside sales department also provides engineering services for discontinued or hard-to-find parts to keep your turbines turning. These include:

- Generator and gearbox components
- Bearings—Steel, Insocoat and Ceramic
- Stator coils up to 15 kV
- Replacement motors—pitch, yaw, cooling pump and all metric motors
- Generator couplings
- Pitch control battery packs
- Encoders—generator/pitch
- Power slip rings—new or rebuilt
- Pitch control slip rings
- Custom slip rings
- Shaft grounding rings
- Auto lubrication systems
- Brushes and brush holders
- Brake pads
- Grease and oil
Generator Exchange, Remanufacture and Storage Program

IPS maintains a wide range of spare generators in various sizes and brands, to eliminate unnecessary capital investment on your part and reduce crane costs. With regional service centers and strategically located warehouses in Canada and the United States, we can exchange and remanufacture failed units quickly and cost-effectively, to minimize downtime and help you keep your run-time commitments. IPS also offers storage programs to manage generators for leading wind farms and OEMs across North America—we’d be pleased to talk with you about how we could increase your generator reliability and overall profitability.

Line Reactor Exchange Program

IPS engineers applied their expertise in rewind technologies, insulation systems and equipment design to significantly upgrade the reliability of existing wind turbine line reactors. Our approach to remanufacturing line reactors targets problems instead of symptoms, drilling down for root cause analysis and setting the stage for definitive solutions. Our proprietary line reactor remanufacture process and design upgrades provide superior insulation dielectrics and heat transfer throughout the inductors. The resulting benefits are higher breakdown voltages, increased efficiency and extended service life.

CNC Precision Parts Manufacturing

Our in-house CNC facility manufactures low- and high-volume precision machined parts for the wind industry. This allows us to meet the delivery and quality expectations of our customers.

Our CNC capabilities include:

- Shafts up to 22” diameter and 80” long
- Milling up to 20” x 40” plate
- Drilling and tapping of holes
- Milling of flats and hex parts
- Machining keyways
- Cutting multiple parts and sizes up to 16” diameter
- Digital bore gauges
- CADCAM 3D drawings

Remanufactured line reactor for GE 1.5, 1.5S and 1.5SLE turbines

Slip ring

Insulator

Cable clamps

Stub shaft

Integrated Power Services
IPS is a power services company, providing premium-quality electrical and mechanical services to the wind industry. We also provide products and parts for all major wind turbine components.

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