SERVICE
PORTFOLIO

SUSPENDED PLATFORM AND ROPE ACCESS WORKS IN OFFSHORE AND ONSHORE WIND PARKS

Gridinta

GENERAL INSPECTION OF THE WIND TURBINE

Gridinta provides specialists to perform work of any complexity, on both onshore and offshore wind parks using suspended platforms as well as rope access method. All technicians have permissions and International certificates for rope access work in European countries and beyond.

Services performed using suspended platform or rope access:

- Internal and external inspection of the rotor blade
- Inspection of root flange laminate cracks
- Rotor blade Lightning Protection System inspection, LPS continuity inspection, the 4-wire resistance measurement of the LPS
- Documenting of all visible bearings as well as the parts of the gearbox by borescope
- Wind turbine tower inspection

WIND TURBINE GENERATOR NDT INSPECTION

Using a system of different inspection methods and analysis for preoperational and regular operational inspection of the wind generator elements ensures the earliest possible detection of any departure from the norm and defect occurrence. This allows avoiding potential damage and shortening the idle time of the wind power turbine.

Methods:

- Visual testing (VT) including visual inspection of rotor blades
- Dye penetrant testing (PT)
- Ultrasonic testing: Manual UT and UTM method; Automatic P-scan and T-scan method
- Thermograpic inspection
- Rotor hub main bearing UT, PA UT inspection

ROTOR BLADE INSPECTION

Gridinta provides inspection and repair services for rotor blades and wind towers. Our specialists use a thermographic application technology for detecting defects in the structure of the wind turbine blades. Technicians compile inspection protocol depending on the scope and complexity of the matter.

Methods:

- Schematic drawing of the blade with the exact location of detected defects
- List of individual defects with the dimensions of faults specified
- Photo and video material
- Analysis of defects and recommendations for their elimination

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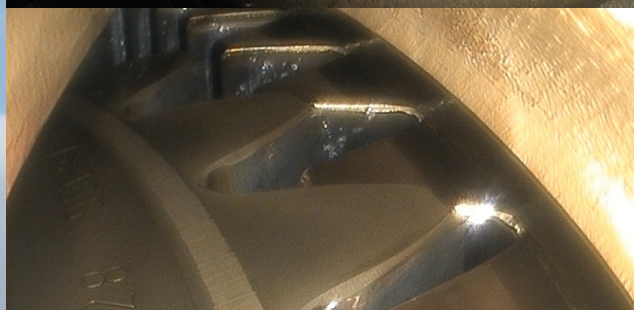

ROTOR BLADE REPAIR AND OTHER SERVICES

By analyzing the results of the rotor blade inspection report, Gridinta specialists prepare recommendations and provide solutions for the repair of the detected defects. When analyzing the repair technology provided for the project, account must be given to the kind and nature of the faults as well as the acceptability of the defects.

Blade repair is carried out by the specialists who have completed special training for working with composite materials (fiberglass and epoxy resin). To accelerate the repair process as well as to achieve the maximum quality of the blade repair, vacuum and curing methods are applied. After completing repair works for the structure, its paint coat is necessarily restored.

- Vortex replacement, aerodynamics exchange
- Rework, repair and exchange of blade equipotential bonding rails
- LE TE cracks
- LEP tape repair and exchange
- Lightning damage repair

Other services:

- Wind turbine cleaning and drainage clearing works
- Tower and rotor blade bolt exchange
- Tower and rotor blade painting works
- Replacement and installation of electric cables

SUSPENDED PLATFORMS

Use of suspended platforms in wind parks offer safe access to perform various inspection, maintenance and repair works in wind parks.

Gridinta specialists have worked with temporary suspended platforms from companies such as Gebr. Käufer GmbH, Accessus, Spider by BrandSafway and other.

FREQUENTLY USED PLATFORM SPECIFICATIONS

K-BP-2 L General specifications:

- Acess for rotor blades
- Usable distance for rotor to tower up to 12 m
- Optimal working position
- TUV certified

K-BP-4 General specifications:

- T IRAK winches with payload of 1 150 kg
- Height reachability close to the nacelle
- Bridgeable blade-tip / tower distance max. 17,5 m
- Access to any blade position through swiveling gangways
- Working at higher wind speeds up to 14m per sec is possible
- Extremely stable driving and working behavior due to the
- 3-winch-concept
- Simple, fast and safe installation due to folding
- Mechanism and locking clamps

Platforms have been verified by Nordex and Vestas as safe to use with the relevant wind turbines.

WIND TURBINE GEARBOX INSPECTION

Wind turbine gearboxes are regularly inspected to avoid repairs, downtime and to ensure a long lifespan. Endoscopic inspection is the only way to thoroughly inspect a gearbox or any other bearing. Borescopes are used to access the inner parts of the gearbox and to obtain high-quality images of the inaccessible areas that are prone to damage.

Gearbox inspection is aimed to identify the following fault types:

- Varying degrees of bearing and gear wear
- Micro to heavy pitting
- Carbonization and effects of high or increased temperatures
- Particle wear, fractures, corrosion and cracking
- Light and heavy grooving or scoring
- Spalling, fretting, scuffing and uneven wear patterns
- Heavy 'spots' on bearing rollers or gears
- False and true brinelling
- Loading anomalies
- Abrasive and erosive wear
- Fluting and arcing effects

Having completed the inspection specialists analyze the collected data adhering to international standards and compile gearbox inspection report.

CERTIFICATES

Our rope access technicians are IRATA (Industrial Rope Access Trade Association) certified.

All Gridinta technicians also hold all other necessary certifications to ensure efficient flow of procedures as well as the adherence to health and safety regulations at the work place.

PARTNERS

AND OTHER



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