

# Wind Energy Services

ASSET INTEGRITY, INSPECTION, & REPAIR



**A HIGHER LEVEL  
OF RELIABILITY®**





## Delivering a 'Higher Level of Reliability<sup>®</sup>' to the Wind Energy Industry

Acuren recently acquired Complete Wind Corporation (CWC) and Suspendedem. These acquisitions combine Acuren's substantial experience and capacity in rope access, NDT and engineering with specialized expertise in wind turbine services to provide a comprehensive solution to wind farm owner and operators in Canada and the United States. Acuren has provided services to the wind energy industry in the form of NDT and Rope Access Industrial Services since 2008 and these two important new acquisitions will significantly enhance our capabilities for the industry.

We know your business. We are seasoned experts. Our pool of technicians have been providing inspection, repair and maintenance solutions for wind energy assets, servicing owners, operators and OEMs since 1994. Our teams inspect in excess of 10,000 blades, and repair more than 500 blades annually.

Our dedicated wind services team would love to hear about your project needs. Please reach out to us at **1-800-218-7450** or **[info@acuren.com](mailto:info@acuren.com)**.

### Rotor Blade Life Cycle Management Services



#### FABRICATION

- QA surveillance
- NDE inspections
- NDE tooling



#### CONSTRUCTION

- Port inspections
- Repair oversight
- Blade receiving
- Site repairs
- Post install visuals
- Vibration analysis
- Dynamic balancing



#### END OF WARRANTY

- 100% inspection
- EOW report
- Claims support
- Repairs
- Repair oversight



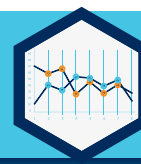
#### PREVENTATIVE MAINTENANCE

- Internal inspections
- External inspections
- Defect monitoring
- LPS inspection
- NDE inspections



#### CORRECTIVE MAINTENANCE & OPTIMIZATION

- In-house engineered repair procedures
- Cat 1-5 repairs
- LEP solutions
- Retrofits and upgrades
- Icing solutions
- Light mechanical
- Painting



#### LIFE EXTENSION / DECOMMISSION DECISION

- 100% inspection
- Asset performance review - repair history review
- Engineering assessments - Fit for Service, Remaining Life Assessment
- Preventative and corrective maintenance program to maximize remaining life
- Strain and stress analysis
- Continue defect monitoring

*The graphic above highlights the rotor blade life cycle management services and programs we offer.*

## YOUR ROTOR BLADE LIFE CYCLE MANAGEMENT PARTNER



## DELIVERING A HIGHER LEVEL OF RELIABILITY®

1



### RELIABLE SERVICE

Leading with integrity, and pride in our work, we deliver uncompromising safety, quality and productivity at every stage in our customer journey.

2



### RELIABLE EXPERTISE

By putting people first, supported by investments in training, we attract, retain and deploy, the best talent in the industry.

3



### RELIABLE VALUE

Growing together, ensures we get better together, we leverage our enterprise, 83 office network, technology enablers and multi-disciplined crews to remove cost, and create value for our clients.



10,000  
Annual  
Inspections

500  
Annual  
Repairs

Rotor Blade Metrics



1994

Our management team has been in the wind industry since 1994

What sets us apart from all the rest:

RELIABLE SERVICE.  
RELIABLE EXPERTISE.  
RELIABLE VALUE.

Unparalleled North American **TRIR** (total recordable injury rate) of **0.09** for 2021.

Our crews are known for rapid deployment to the majority of North America's wind farms and are recognized for their outstanding capabilities and specialized expertise in the following areas:

## ROTOR BLADE LIFE CYCLE MANAGEMENT SERVICES

### At Factory

- Rotor blade manufacturing 3rd party Quality Assurance
- Support for baseline NDT
- NDE solutions for product integrity enhancement

### At Port

- Incoming inspection for transport damage, and repairs, as required

### At Site

- Baseline Condition and Commissioning
  - ◊ Blade receiving, repairs and/or repair oversight
  - ◊ Post installation visual inspections, infrared thermography and vibration analysis
  - ◊ Generator Current evaluation
  - ◊ Vibration acceptance testing (generator, gearbox, bearings)
  - ◊ Electrical infrared for electrical connections

### End of Warranty

- 100% internal and external inspection
- EoW Report and Claims Support
- Repairs or Repair 3rd party QA/Oversight
- Rotating Equipment Condition Assessment (generator, gearbox, bearings)

### Preventative Maintenance

- Internal visual rotor blade inspections
  - ◊ 5-year frequency, with accelerated targeted re-inspection rates for anomaly tracking
  - ◊ Asset integrity reporting
  - ◊ Defect tracking and review by experienced composite experts

### External Visual Inspections

- Annual basis
- Targeted inspection via drones, platform, boom truck, crane, rope access or ground
- Lightning protection testing, inspections and installation of systems

### Planned Corrective Maintenance

- Category 1-5 repairs
  - ◊ Experience language (spar cap/large transverse cracks/serial defects etc.)
- In-house engineered repair procedures (cat 1-5)
- Leading edge protection installation
- Products: Polytech ELLE, 3M wind tape, BladeRep10 and others
- Performance Enhancement
  - ◊ Retrofits: Vortex generators; gurney flaps
  - ◊ De-icing Systems
- Dynamic balancing and vibration analysis
  - ◊ Mass unbalance
  - ◊ Aerodynamic rotor blade alignment check
  - ◊ Re-balancing





### OTHER SERVICES

- Condition Based Monitoring including:
  - ◊ Vibration (periodic, installed wireless sensors, diagnostics)
  - ◊ Infrared (electrical and mechanical)
  - ◊ Used Oil Analysis (including online analysis)
  - ◊ Ultrasonic Emission testing (slow speed bearing condition)
- Rope Access
- Light Mechanical & Maintenance
  - ◊ Bolt torquing
  - ◊ Small motor changeouts
  - ◊ Deck bolt changeouts
  - ◊ Tower painting
  - ◊ Tower cleaning
  - ◊ Painting, coating and welding
- Visual Inspections
- NDE
  - ◊ Base Bolting
  - ◊ Tower Flange Welds
  - ◊ Gear Box and Components
  - ◊ Bearings and Raceways
  - ◊ Reporting and Data Storage
  - ◊ Shaft inspections
  - ◊ Blade root inspections



#### SPRAT and CANREA Association Affiliations



Society of Professional Rope Access Technicians



Canadian Renewable  
Energy Association

WIND. SOLAR. STORAGE.

Acuren provides state-of-the-art nondestructive testing, inspection, engineering and rope access enabled industrial services, delivered throughout 90 locations and utilizing 5,500 employees across North America and the United Kingdom.



CONTACT OUR WIND EXPERTS TODAY

1-800-218-7450



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