



Juler Group is a comprehensive risk management firm focused on providing cost effective industrial hygiene, occupational safety, environmental, training and skilled outsourced engineering services. Principals in the firm have over 20 years in risk management, and over the past five years we have enhanced our capabilities and capacity to serve the unique needs of the energy industry and have value-added services that are specific to the wind energy sector.

Health, Safety & Environmental Wind Power Energy Industry Challenges

Environmental issues facing the Wind Energy Industry

- Construction, Commissioning & Decommissioning activities of wind farms
 - ≈ Noise, Vibration, Soil Erosion, Biodiversity & Habitat Impact
 - ≈ Visual Impact of towers, blades, nacelles and power stations
- Operations of wind farms
 - ≈ Noise, Vibration, Light & Illumination
 - ≈ Habitat Alteration & Water Quality
 - ≈ Species disturbance, injury & mortality
- Noise associated with wind farms
 - ≈ Mechanical and aerodynamic including low frequency, impulsive low frequency & continuous broadband noise sources
 - ≈ The Assessment and Rating of Noise from Wind Farms – BERR report

Occupational Safety issues facing the Wind Energy Industry

- Working at Heights over land or water – Fall Protection (Extreme Height) and Rescue (Extreme Height Fall Arrested Individuals & confined space rescue)
- Mobile & Tower Crane Operations – qualified & certified operators, critical lifts, crane inspection
- Critical Lift Crew - Operator, Rigger, Signalman, Spotter Training, Qualification & Certification
- Power Tool safety
- Control of Hazardous Energy – Lockout Tagout
- Confined Spaces – hub and nacelle
- Electrical & Fire Safety
- Preventative Maintenance & Repair Operations of large mechanical and high voltage equipment
- Situational Awareness & Severe Weather Safety including thermal stress
- Working Over Water Safety – risk and hazard assessments, severe weather, water rescue, buoyancy equipment, support boats and emergency personnel
- Helicopter winch operations for offshore wind turbines
- Remote Location Emergency Response
- Life Saving/First Aid/CPR/AED
- Community Safety
 - ≈ Aircraft and Marine Navigation
 - ≈ Electromagnetic Interference & Radiation
 - ≈ Blade and Ice Throw, Tower Collapse

Industrial Hygiene issues facing the Wind Energy Industry

- Manufacturing & Assembly of towers, blades, nacelles, generators, gears, yaw controls, etc.
- Air contaminants requiring personal air monitoring in manufacturing & assembly operations
- Hazardous noise requiring personal noise dosimetry and possibly noise abatement engineering
- Hazardous Waste Generation & Disposal

Wind Energy manufacturing and assembly sector includes many types of operations

- Advanced Polymer Matrix Composites and Fiberglass Composites
- Metal Fabrication – steel, alloys & composites
- Painting, Coating & Shot Blasting
- Specific Hazards
 - ✓ Airborne volatized epoxies (spraying or high temperature curing) – respiratory exposure
 - ✓ Surface epoxy films – dermal exposure
 - ✓ Airborne volatized epoxy hardeners (spraying or high temperature curing) – respiratory exposure
 - ✓ Surface hardeners – dermal exposure, cobalt
 - ✓ Polyurethane isocyanates – respiratory & dermal exposures
 - ✓ Phenolic & Amino (Phenyl-formaldehyde) resins - respiratory & dermal exposures
 - ✓ Urea-formaldehyde resins
 - ✓ Fibers – carbon/graphite, aramid, glass oxides, FG roving
 - ✓ Silica Dust
 - ✓ Solvents – ketones (Acetone, MEK, MIBK), alcohols & chlorinated hydrocarbons (Methylene Chloride, Trichloroethylene), and Toluene, Xylene, THF, etc.
 - ✓ Other Aromatic Amines – MPDA, Polyaminoamide, Anhydride
 - ✓ Welding fumes laden with nickel, chromium, manganese, zinc, lead, cadmium, hexavalent chrome, NO_x, CO,
 - ✓ Plating operations – cadmium, beryllium, hexavalent chrome
 - ✓ Grinding, Sanding and Blasting operations dusts, particulates, fibers
 - ✓ Hazardous Noise



With a growing, and renewed, global interest in renewable energy sources the industry is poised for rapid growth. With this growth the need for increased training and monitoring along the entire chain of this promising industry. In addition, more sophisticated programs and systems will be implemented as this young industry experiences the growing pains associated with rapid growth.

The HSE challenges confronting the wind energy industry as it grows and matures can be addressed through proper assessment, planning, training and communicating to all stakeholders. This will be essential in the near future as the industry expands and develops into a leading source of energy.

Juler Group Incorporated is a leading the way to develop specialized training, monitoring and programming for the Wind Energy Industry. Our comprehensive risk management service areas are as follows.

Industrial Hygiene Services include:

- Personal Noise Dosimetry – Time Weighted Exposure Analysis
- Noise Contour Mapping – Indoor Factory Noise Modeling
- Noise Abatement Engineering
- Chemical Exposure Assessment & Monitoring
- Metals sampling and Analysis (e.g. Titanium, Cobalt, Hexavalent Chrome, Beryllium, Cadmium)
- Paints & Solvents Hazard Assessment & Monitoring
- Welding, Cutting, Brazing, Plating Operations Monitoring
- Dusts, Acid Mists, Carbon Monoxide, Metal Fumes, Metal Working Fluids, and Organic Vapor Exposure Analysis
- Physical Hazard Assessment – Vibration, Radiation, Thermal, Illumination
- Hand Tool Hand-Arm Vibration Analysis
- Personal Protective Equipment (PPE) Assessment
- Respirator FIT Analysis
- Certified Industrial Hygienist Strategies and Management
- Certified Safety Professional Strategies and Management
- Certified Industrial Hearing Conservation Program Management
- OSHA/NIOSH Analytical Methodology
- AIHA Accredited Laboratories

Occupational Safety services include:

- Wind Turbine Fall Protection & Rescue
- Powered Industrial Truck Certification
- Crane, Hoist & Rigging Training
- Job Hazard/Safety Analysis & Training
- Incident Investigation & Training
- HAZWOPER/RCRA Training
- Hearing Conservation Program Management
- Certified Trainers and Designated Evaluators
- Emergency Response
- Over 56 Compliance & Certification Training Courses



Environmental services include:

- SWP3, HWMP, SPCC, SARA
- Industrial Wastewater Permits
- Air Quality & Noise Impact Studies
- ISO 14001

Risk Management services include:

- Risk Management Plans (RMP) & Auditing
- Process Safety Management Plans (PSM) & Auditing
- Emergency Response/Action Plans
- Threat Assessment & Survivability
- Business Continuity Planning & Training
- Leadership & Succession Planning
- Traditional Risk Management
- Non-Traditional Risk Management

JULER GROUP INCORPORATED

Austin, Texas 78759

512.346.4800

<http://www.julergroup.com>

United States

512.346.4800

Canada

1.800.698.2826

International

1.800.698.2826