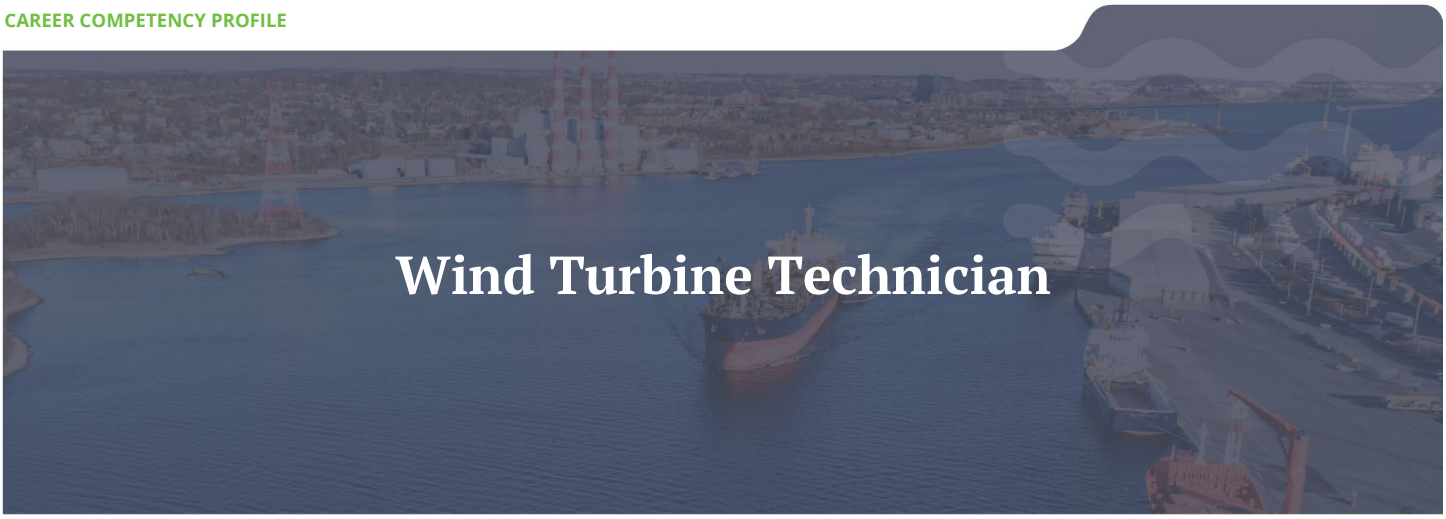

Wind Turbine Technician

ROLE OVERVIEW

As a wind turbine technician, you are responsible for maintaining, troubleshooting, and repairing wind turbines and the nacelles.

Your average workday is spent climbing and inspecting multiple turbines, where you will use computers to diagnose electrical malfunctions and report and schedule any other problems you notice during the examination.

You will have to troubleshoot and repair all aspects of the wind turbine while working in confined spaces and at heights. When outside, wind turbine technicians can be hundreds of feet in the air and need to have a heightened sense of safety. You will have to wear fall protection full body harnesses that are attached to appropriately rated tie off points on the nacelle and move cautiously while working.

Wind technicians are also responsible for administration of the site. Depending on your organization, you may be responsible for multiple turbines on a large wind farm or as a contractor, servicing multiple farms across the country. You are responsible for ordering spare parts and ensuring there is a proper inventory of parts available for needed repairs, as well as the day-to-day turbine operations.

This is an emerging occupation in Canada. Resources have been developed from similar existing occupations in Canada and other similar jurisdictions.

STRATA LEVEL: 2 – Technician

Also Known as:

- Wind Services Technician
- Offshore Installation Technician

Education and Experience:

- Completion of high school diploma.
- Completion of a certificate, diploma, or degree in hydraulic, electrical, or mechanical engineering technology or related discipline would be considered an asset.
- Completion of a wind turbine technician certificate is a strong asset.
- On the job training will be provided by employer.
- Be in good physical health, able to work in confined spaces, and heights.

Associated NOC(s):

- **2242** – Industrial Instrument Technicians and Mechanics

TECHNICAL

Troubleshooting

Identifies operating problems and inefficiencies in current equipment, process, or systems and report problems to determine effective solutions.

- Responds to troubleshooting requests to provide initial diagnostics to wind turbines, generators, or control systems to determine root cause of error.
- Uses specialized instruments to test electrical components of wind systems to diagnose root cause of problem.
- Use fault codes to identify the sources of the fault to equipment, processes, and health and safety to determine appropriate solution to address fault.
- Works with other technicians to develop electrical contingency strategies to effectively react to faults to minimize disruptions and risk.
- Uses sensor technologies to diagnose and detect malfunctions in sensor components, systems, and products to remove, replace, or repair these components when necessary.
- Completes service records and repair documentation to maintain service records.
- Documents the solution or service performed when receiving abnormal or unique fault codes to record solution to improve service for next technician.

Electrical Systems

Contribute to the assembly, commissioning, and maintenance of electrical circuits, equipment, and systems to fulfil the project requirements and ensue operational functionality.

- Apply wind farm test plans to test controls and electrical systems to ensure operating equipment and systems function as expected.
- Collaborate with other technical staff to analyze electric motors, generators, and transformers to measure given output requirements.
- Collaborate to select and apply electrical cabling requirements to verify system grounding for a variety of applications.
- Collaborate with other technical staff to analyze electrical and electronic circuits to identify appropriate pathways and solutions.

Mechanical Systems

Contribute to the assembly, commissioning, and maintenance of mechanical assemblies, equipment, and systems to fulfil the project requirements and ensue operational functionality.

- Apply engineering principles to the analysis and testing of mechanical engineering projects.
- Use computer applications to support the testing and analysis of mechanical engineering projects.
- Apply wind farm test plans to test structures, controls, mechanical systems to ensure operating equipment and systems function as expected.
- Services, repairs, adjusts, and tests machines, devices, moving parts, and equipment that operate primarily based on mechanical principles to ensure functionality.

PERSONAL AND PROFESSIONAL

Communication

Positively directs outcomes by delivering communication that results in a better understanding of goals and objectives and that capture interest, and gain support for immediate action.

- Communicates with other team members to share information and resources to exploit opportunities and efficiencies.
- Actively listens to team members to address concerns and integrate ideas, values, and new information where appropriate.
- Verbally conveys complex technical information accurately, clearly, and effectively to communicate technical operations.
- Asks questions when assigned unfamiliar tasks to ensure understanding and accuracy.
- Actively listens to team members and managers to understand different perspectives and incorporate feedback into workplace tasks.

Collaboration

Engages in professional collaborative efforts with other members of the team, including sharing information and expertise, utilizing input from others, and recognizing others' contributions to work towards a common goal.

- Listens to constructive feedback and incorporates suggestions to achieve a collective objective.
- Ensures tasks are completed in the most efficient manner to optimize workplace output.
- Works to establish good working relationships with junior and senior personnel to work as part of a team and assist others.
- Reports to site lead to understand daily responsibilities to ensure wind farm functions effectively.

LEGAL, REGULATORY, AND POLICY

Health and Safety Procedure

Abides by and advocates specific workplace safe operating procedures and occupational health and safety requirements within a defined jurisdiction to ensure the health and safety of others.

- Adheres to offshore safety standards to maintain a safe working environment for self and others.
- Conducts all operations within the companies established safety management system.
- Documents any and all incident/near-miss reports to document incidents and adhere to safe operating procedures while working.
- Wears provided personal and protective equipment at all times to ensure safety and minimize near misses.
- Adheres to lockout/tagout procedures to secure machines, equipment, and processes in a zero-energy state to perform service.
- Participates in daily hazard assessments or toolbox meetings to ensure all employees are aware of the potential risks associated with their assigned duties.

Marine Emergency Duties

Assesses, prepares, and responds to onboard emergency situations to assist in their own or crew's survival and rescue.

- Administer CPR or first aid to provide help to a sick or injured person until they receive more complete medical treatment.
- Operates survival craft equipment in the event of an emergency to ensure the safety of self and crew.
- Participates in regular safety exercises, drills, or scenarios to maximize safety in potentially dangerous scenarios.
- Identify muster signals in the event of an emergency to take appropriate measures to ensure the safety of self and crew.

ENVIRONMENTAL

Wind Farm Monitoring

Monitors wind farm operational data, equipment, and structures to detect failures, problems, and required servicing to perform troubleshooting and repairs.

- Uses specialized equipment, sensors, or software to monitor wind turbines to ensure systems are properly functioning.
- Uses specialized machine learning software to automatically detect technical faults and recommend corrective measures.
- Inspects wind farm equipment, structures, and materials to identify the cause of errors or other problems or defects.
- Perform routine inspections on wind turbines by climbing the turbines and carefully inspecting all parts to identify any problems and assess the need for repairs.

Wind Turbine Servicing

Maintain and repair electrical, mechanical, and hydraulic components and systems to ensure energy can be generated, transmitted, or distributed.

- Maintain tool and spare parts inventories required for repair, installation, or replacement services.
- Lubricates moving parts such as gearboxes, bearings, and other components within the system, and resolve any major issues that may develop to maintain wind turbines.
- Maintains written records of all repairs and maintenance interventions undertaken, including information on the parts and materials used, etc. to document service records to plan future maintenance.
- Carries out repairs as required to equipment, structures, or systems to original manufacturers specification to ensure repaired equipment is functioning to specifications.
- Perform preventative equipment maintenance tasks to prolong the lifespan of equipment, components, or systems to minimize disruptions and reduce long-term costs.
- Perform fluid tests.
- Use hydraulic, electrical, or pneumatic tools to perform torquing and tensioning to wind farm components to service wind farms.

Wind Turbine Commissioning

Interact with mechanical, electrical, or hydraulic components to commission wind turbines and service other wind farm components.

- Operate manufacturing equipment to fabricate wind turbines to specified parameters.
- Assist in assembly of individual wind generators or other wind farm components to construct wind farms.
- Test structures, controls, or mechanical, hydraulic, or electrical systems that are part of a wind farm to ensure operating equipment is functional and safe.
- Start or restart wind turbine generator systems to ensure proper operations.
- Replace and test reserve battery power to ensure wind farm has power in case of system fault.

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