



IDENTIFICATION

Department	Position Title	
Infrastructure	Electrical/Electronics Technician	
Position Number	Community	Division/Region
33-12938	Fort Smith	Facilities/South Slave

PURPOSE OF THE POSITION

The Electrical / Electronics Technician inspects, services and repairs electrical and electronic systems in government owned and operated buildings, the community of Fort Smith and at remote sites within the region, to ensure safe and efficient operation in accordance with the Canadian Electrical Code, Northwest Territories (NWT) Safety Regulations and departmental policies and procedures.

SCOPE

Located in Fort Smith and reporting to the Facilities and Maintenance Coordinator, the Technician is primarily responsible for performing electrical inspections, servicing and repairs on some 110 GNWT (Government of the Northwest Territories) assets within the community of Fort Smith, but must be available if required to assist at other locations within the region. This position completes and/or manages over 1200 work order per year at an approximate value of \$180K.

The incumbent conducts electrical and electronics inspections and repairs on highly sensitive and critical systems in buildings within the community of Fort Smith and throughout the region. Typically the inspections and much of the resulting work is governed by a variety of codes and legislation, including but not limited to the Canadian Electrical code, Canadian Building Code, NWT Fire Code, and NWT Safety Legislation. Compliance with these codes and legislation is required for the continued operation of the buildings in question (typically Health Centres, a Hospital; Schools, government office buildings, water plants, and petroleum products tanks farms - many in isolated communities).

A challenge for this position is in coordinating work assignments with those of other trades positions in order to see a project completed efficiently and effectively. Work is almost always

performed with little or no direct supervision, and, most often without the benefit of professional collaboration.

RESPONSIBILITIES

1. Due to the fact that many GNWT building systems are operated through computerized controls, and any given building may have a number of computerized systems and software applications, the incumbent must be familiar with and be capable of troubleshooting and making programming adjustments as needed to meet code operating requirements. Inspects all electrical systems, electronic systems, Direct Digital Control systems (DDC), Energy Management and Control Systems (EMCS), Boiler control systems, Fire Alarm Systems, electrically-based fire control systems and generator systems in GNWT buildings and works to identify any potential electrical hazards. Consults with various codes and legislation, and plans and executes repairs on these critical fire and life safety systems.

- Conducts regular preventative maintenance checks of all electrical systems and components, including controls in accordance with the department's Computerized Maintenance Management System (CMMS) to ensure systems are safe and functioning according to design parameters.
- Diagnoses faults in electrical systems, components and appliances and identifies repairs required to correct deficiencies. Executes repairs as required.
- Completes code or legislation required formal inspection reports on all deficiencies and initiates and completes work orders for the repairs.
- Uses the CMMS to generate work orders as necessary and completes the work where possible. Otherwise the work is issued to a contractor and completed under the supervision of the incumbent. Incumbent inspects all contractor work to ensure compliance with code and GNWT policies and safety practices.
- Tests emergency generators and switch gear at regular intervals to ensure they are operating properly. Identifies deficiencies and corrects them, if electrical in nature, and advises the Maintenance Coordinator if mechanical repairs are required.
- Reviews electrical blueprints for new construction and renovations to ensure compliance with codes and the GNWT's Good Building Practices for Northern Facilities (GBP), as well as to confirm that what is designed is appropriate for the application. As well, the incumbent advises management on building design and system specification that may cause problems or logistics-related issues, based on past experience and location.
- Uses effective and approved lock out tag out systems to prevent personal injury, occupant injury, property damage or dangerous situations.

- 2. Maintains electrical systems, components and appliances in government buildings and works to ensure a safe and efficient operation.**
 - Installs, repairs and replaces electrical wiring and lighting systems to ensure safety of users and that systems function properly.
 - Installs and repairs electrical motors and controls, fire alarm systems, clock systems and electrical heating systems and associated HVAC (Heating, Venting and Air Conditioning) controls to achieve maximum building energy efficiency.
 - Installs, repairs and replaces generator components and switch gear to ensure safe and efficient operation.
 - Repairs or replaces unserviceable motors and equipment as required.

- 3. Completes records for all maintenance and repairs to electrical systems and components to identify historical costs and work performed on each asset.**
 - Identifies supplies required to complete jobs and compiles material lists in order to ensure sufficient materials are on hand.
 - Completes work orders for all work assignments indicating materials used, work accomplished and time required to complete jobs in order to document associated costs.
 - Accounts for eight hours each day plus any overtime hours to ensure time is charged out against assets.
 - Completes applications for electrical permits in order to obtain approval to commence with electrical work.

- 4. Checks electrical work performed by contractors to ensure compliance with plans, specifications and governing code.**
 - Conducts inspections of all electrical installations to ensure work requested was completed according to the department's requirements.
 - Identifies deficiencies in workmanship or quality of materials that require correction.
 - Identifies, arranges, assists and supervises any specialty resources that are required to complete a job.
 - Organizes, supervises and inspects any warranty electrical, electronics and controls work performed by contractors.

- 5. Specifies, orders, installs, services and maintains special electrical and electronic components to ensure they operate safely and continuously in accordance with original design specifications of the equipment.**
 - Isolates faulty electronic circuits or components and replaces circuit boards or other components on boiler, HVAC or other heating or building system controls. Troubleshoots, repairs and tests alarms for facility intrusion, personal assault, electrical system failure, mechanical system failure and sound systems within applicable GNWT assets to ensure component is functioning safely within its parameters.
 - Installs, sets up, and maintains specialty equipment to prevent patient elopement at hospitals and other health care facilities as required.

6. Services uninterrupted power supply (UPS) systems and generators to ensure continuous power for essential pieces of equipment or entire building where they are designated as emergency community shelters.

- Repairs, services, tests, certifies and ensures the operational integrity of fire alarms and emergency lighting systems. Conducts monthly, quarterly and annual inspections, adjustments and repairs to achieve the above.

WORKING CONDITIONS

Physical Demands

- Works in awkward positions, in small cramped spaces, in high places, carries heavy tools and equipment
- Works at great heights on a regular basis requiring the use (knowledge of how to use) safety harness and other fall arrest gear, bucket trucks, scissor lifts and scaffolding
- Works regularly with high energy systems that are potentially lethal
- Intensity: Substantial; frequency: 6 hours plus per day

Environmental Conditions

- Exposure to toxic/unpleasant fumes, exposure to electrical systems and components
- Risk of injury both in the nature of the work and in performing repair work on site
- As part of normal duties, may be required to work outside in extreme temperatures, on building roofs, or high on the walls of buildings
- The sensitivity and criticality of the work the position performs may require performance of duties in conditions that would not otherwise be permitted.
- Intensity: Substantial; frequency: 4 - 6 hours per day

Sensory Demands

- Using hand-eye co-ordination when working with colour coded electrical wires
- Must be able to be focused when working with small electrical components
- Must be able to endure long periods of focused concentration to ensure personal safety, and that of others, and to complete complex technical tasks
- Intensity: Substantial ; frequency: 4 - 6 hours per day

Mental Demands

- Regularly has to fly in small aircraft (often in inclement conditions) to surrounding communities for a few days at a time.
- Regularly has to drive on during the winter and on ice road systems to get to isolated communities.
- The sensitivity and criticality of the position may require travelling in conditions that would not otherwise be permitted.

KNOWLEDGE, SKILLS AND ABILITIES

- Must have knowledge of electrical systems, electronic components, boiler, HVAC and other heating and building control systems, the Canadian Electrical Code, CSA and UL codes and guidelines, the GBP and the NWT Safety Regulations, along with practical experience in order to recognize electrical hazards and complete all repairs and installations safely and in accordance with the electrical code.
- Must have superior ability to communicate effectively with apprentices, other trades, contractors, suppliers, factory technical staff, designers, engineers and managers to ensure that installation, repairs and operational functionality are achieved efficiently and effectively.
- Must have superior ability to communicate effectively with clients in order to coordinate equipment and facility downtime, arrange appropriate times for accessing buildings, and performing work and training on new equipment and systems such as security systems etc.
- Must have the ability to train and mentor apprentices and other helper positions.
- Ability to keep records in order to document work performed on assets and ensure an adequate supply of materials are on hand to complete work.
- Ability to diagnose faulty equipment, troubleshoot and make repairs.

Typically, the above qualifications would be attained by:

- Certification as a Red Seal Interprovincial Journeyman Electrician; and,
- Three (3) years of directly related experience in both electrical and electronics systems.
- A class 5 driver's license is required.

ADDITIONAL REQUIREMENTS

Position Security

- No criminal records check required
- Position of Trust – criminal records check required
- Highly sensitive position – requires verification of identity and a criminal records check

French language (check one if applicable)

- French required (must identify required level below)

Level required for this Designated Position is:

ORAL EXPRESSION AND COMPREHENSION

Basic (B) Intermediate (I) Advanced (A)

READING COMPREHENSION:

Basic (B) Intermediate (I) Advanced (A)

WRITING SKILLS:

Basic (B) Intermediate (I) Advanced (A)

- French preferred

Aboriginal language: Choose a language

- Required
- Preferred