



IDENTIFICATION

Department	Position Title	
Infrastructure	Electrician/Airfield Maintenance Specialist	
Position Number	Community	Division/Region
33-16577	Fort Simpson	Airports/Dehcho

PURPOSE OF THE POSITION

The Electrician/Airfield Maintenance Specialist (AMS) maintains and repairs all airport and airfield electrical systems, equipment and components located in Fort Simpson, Fort Liard, Wrigley, Nahanni Butte, Sambaa K'e and Jean Marie River, as well as the Lafferty and Johnny Berens ferries on Highway 1, to ensure operational integrity and reliability.

This position also maintains all airport surfaces, including runways, taxiways, aprons and roadways. The duties include winter snow removal, runway surface condition reporting, roadway and drainage ditch grading, asphalt crack sealing, and line painting

SCOPE

The Government of the Northwest Territories (GNWT) owns and operates airports and highway ferries in the NWT. The Airports and Marine Divisions have the responsibility to ensure that airports and marine facilities are in place to meet the demands of the air industry, and that the airports and ferries are operated according to federal regulations and standards.

Located at the Fort Simpson Airport, this position reports to the Supervisor, Surface and Mobile. The incumbent organizes and implements a planned program of maintenance and repair for all electrical systems, equipment and components at the six Dehcho Region airports and the two Highway ferries.

The airports equipment referred to includes:

- High and Low intensity approach lights
- Visual flight approach systems
- High-voltage runway edge lights and airside lighting
- Building electrical systems
- Airport groundside lighting and electric gate components

- Airport emergency power generation systems
- High-voltage switch gear
- Low-voltage control systems including DDC
- Fire alarm and detection systems

This position contributes to the safe and reliable operation of the Fort Simpson Airport and the safe passage of the traveling public by maintaining the airport surfaces in operable conditions. This includes clearing and maintaining runways, taxiways, aprons and roads, drainage systems and security fencing.

The incumbent communicates on VHF with Community Aerodrome Radio Station while performing airfield maintenance duties to ensure that clearing and maintenance continue with minimum interruption of air traffic.

RESPONSIBILITIES

1. Plans, organizes and implements the maintenance program for the airport/ferries electrical systems.

- Formulates and implements work programs and develops work methods, procedures and acceptance criteria.
- Establishes operation and maintenance costs, and capital costs of new systems, equipment and installations.
- Carries out emergency repairs and makes alternative arrangements in response to electrical and power failures, so as to minimize the impact on airport operations.
- Ensures proper completion of Work Orders and Work Requests following the Airport/Marine Maintenance Management System (MMS).
- Prepares requisitions for materials and supplies.
- Prepares and administers maintenance contracts, inspects completed work, and recommends payment of invoices.

2. Maintains and promotes reliable and efficient operation of all airport/ferries electrical systems, equipment and installations, both on and off the Fort Simpson site and at five remote airport sites, and 2 ferries in accordance with Airport/Ferries MMS requirements.

- Conducts regular inspections, tests, checks and verifications on equipment condition and performance.
- Provides emergency repairs and alternatives in response to electrical equipment and power failures so as to minimize interruption of service.
- Adjusts, calibrates, re-aligns and repairs equipment and installations to the required performance standards.
- Reports equipment failures and abnormalities in equipment performance, and recommends corrective action.
- Maintains electrical drawings, data and inventory to "as built" status.
- Maintains adequate supply of materials, spare parts, tools and test instruments to perform emergency repairs and deliver the preventative maintenance program.
- Maintains records of materials spent in preventative maintenance.

3. **Performs diagnosis and restoration of all airport/ferries electrical systems, equipment and installations to the required operational reliability and performance standards.**
 - Consults manuals, drawings, data and diagrams.
 - Locates faults with diagnostic equipment and test instruments.
 - Repairs, adjusts, calibrates, aligns and overhauls electrical equipment.
 - Requisitions parts and materials required to carry out repairs and overhauls.
 - Verifies that operational reliability and performance levels have been restored after repairs and overhauls by conducting tests and trial runs.

4. **Provides technical advice and service to management and other government departments, agencies, contractors, consultants and airport tenants in support of capital projects.**
 - Demonstrates and explains various electrical systems, equipment and installations, and performs shutdowns when required.
 - Checks plans and specifications for new projects to ensure compatibility with other existing systems, equipment and installations on the airport.
 - Provides safety and security escort and orientation when work is performed on airport systems, equipment and installations.
 - Inspects and reports on contractors' work performance and quality in accordance with contract requirements.
 - Ensures that the integrity of electrical systems is maintained during work in progress.
 - Verifies performance and recommends acceptance and commissioning.
 - Stakes utility systems for contractors and airport tenants.

5. **Maintains and improves the condition of the airport surfaces, including runways, taxiways, aprons and roads, drainage systems and security fencing, in compliance with the standards of Transport Canada, to ensure the safe and reliable operation of the Fort Simpson Airport and the safe passage of the traveling public. The Airfield Maintenance Specialist follows the Airport Winter Maintenance Plan and the Airfield Maintenance Training Program.**

Winter Maintenance:

- Removes snow and ice from the apron, taxiways, runways, public access roads, parking areas, meteorological and telecommunication sites and other airfield/airport surfaces.
- Uses Ice control chemicals and materials.
- Provides Canadian Runway Friction Index (CRFI) and initiates Notice to Airmen's (NOTAMs).
- operates specialized heavy equipment, including industrial snow blowers, snow plows, sweepers, graders, gravel trucks, loaders, back hoes, crawlers, trenchers, tractors, mowers and rollers.
- Maintains an adequate supply of materials, parts and equipment.
- Reports on Runway Surface Condition and Foreign Object Debris.

Summer Maintenance:

- Reports on Runway Surface Conditions and Foreign Object Debris.
- Installs, maintains and repairs fencing and signage.

- Installs, maintains and repairs storm drainage systems.
- Identifies unsafe airport surfaces requiring maintenance.
- Maintains all paved aircraft movement surfaces and roadways by applying crack sealing.
- Paints all airside runways, taxiways, ramp areas and road surfaces with centre lines, hold pattern lines and numbers.
- Performs bird and mammal control to prevent damage to aircraft.
- Provides surface maintenance and vegetation control.
- Performs landscaping, determining grades, slopes, seeding, turf maintenance, drainage and ditches.
- Advises the Supervisor of materials required for pavement maintenance.
- Identifies repairs to winter heavy equipment to be scheduled for summer maintenance.
- Performs minor building maintenance as required.

6. Performs preventative maintenance.

- Checks mobile equipment prior to use.
- Records and reports equipment, facility and system deficiencies.
- Maintains all required records.
- Performs minor repairs and assists mechanic to perform major repairs
- Services heavy equipment (oiling and greasing).
- Monitors mobile equipment performance during operations and maintains equipment operations records.
- Keeps the airport in a safe state and clean appearance.
- Provides airport and airfield maintenance assistance at remote sites, as and when required.

7. Assists in the general maintenance program.

- Assists mechanic in servicing and replacing of parts on heavy equipment.
- Assists with installing airfield lighting systems and replaces airfield lighting system lamps, fixtures, windsocks, markers and pull pits.
- Assists other trades and staff members, such as firefighters, electrician, carpenter, millwright, as and when required.
- Assists with airport security measures during emergencies.
- Monitors' airside security.

WORKING CONDITIONS

Physical Demands

On a daily basis for 1 to 4 hours, incumbent performs moderate to substantial physical tasks, such as lifting, pushing, pulling, climbing, bending and working in awkward positions. For example, shoveling, digging, lifting and dumping material, re-bristling runway sweepers and hooking up runway sweepers to trucks, and filling, carrying and stacking sandbags.

Environmental Conditions

Outdoor work is required for approximately 3 - 5 hours per day in all seasons, resulting in exposure to a variety of weather conditions.

Incumbent is exposed to noise, dust, chemicals, fumes, solvents and paints on a daily basis for one hour at a time. Protective shoes and clothing, aprons, coveralls, face shields, masks, breathing devices, gloves, etc. are expected to be worn.

Sensory Demands

The incumbent encounters limited visibility due to adverse weather (rain or snow) while operating heavy equipment for approximately 1 to 4 hours on a weekly basis.

On a daily basis for periods of 1 to 4 hours the incumbent encounters loud noise from equipment and aircraft, and must listen attentively for two-way radio communications from flight service specialists and air traffic controllers, while constantly visually monitoring the airfield and/or busy ramps for aircraft, airside vehicle, and human foot traffic hazards.

Mental Demands

The incumbent is required to travel to other regional airports and two ferry sites each month for 1-5 days per trip.

The incumbent is working for 1 to 4 hours daily in isolation in a variety of weather conditions and is required to make instant decisions regarding the most effective response to ice and snow conditions on runways, taxiways and roadways, knowing that the decisions may directly affect the safety of arriving and departing aircraft.

KNOWLEDGE, SKILLS AND ABILITIES

- Knowledge of the Canadian Electrical Code, and of electrical installation and maintenance practices and principles.
- Knowledge of high voltage (5 KV) and low voltage electrical power distribution systems, safety practices and procedures in the isolation of electrical systems, switching controls, lighting systems, power generation, fire and security alarms and detection systems, visual navigational aid systems, electronics, programmable logic controllers, and a general knowledge of electrical theory as applied to the control and operation of airport electrical systems.
- Knowledge of electrical systems and regulations relevant to airports, such as Airfield Lighting regulations, Industrial Electronics, Fire Alarm Systems, Fire Protection Systems, Programmable Logic Controller Systems, Electrical Power Generator, Logic Controls, High Voltage testing and fault locating, electrical safety.
- Knowledge of heating and air conditioning systems.
- Familiarity with WHMIS.
- Ability to interpret and understand electrical drawings and schematics.
- Skills and ability to use various electrical instruments and equipment for inspections and fault finding such as High Voltage cable insulation tester, cable locators, volt-ohm-amp meters, voltage testers and other electrical and electronic test equipment.

- Oral and written communication skills to provide reports relating to observed occurrences or circumstances upon which operational decisions will be based.
- Ability to read and, when required, modify electrical drawings.
- Ability to work with chemicals such as solvents, coolants, degreasers, etc.
- Ability to work without technical assistance.
- Thorough knowledge of airport operations and procedures for maintenance of airport facilities, such as snow and ice control.
- Knowledge of runway conditions under all types of weather, such as snow, ice, rain, freezing rain, and frost.
- Skills in the operation of the electronic recording decelerometer in order to report on the CRFI to flight service specialists.
- Knowledge of handling and applying hot tar is required.
- Incumbent requires training in bird and wildlife control techniques.
- Incumbent must be familiar with - the Airport Maintenance Management System to record time and material expended on various tasks.
- Organizational and administrative skills.
- Skilled and proficient in the operation and maintenance of heavy equipment.
- Ability to prioritize work and to work independently.

Typically, the above qualifications would be attained by:

- The completion of a High School Diploma; and
- A First Class Journeyman Electrical Certificate, First Class Inter-provincial Red Seal Certificate; and
- Minimum five (5) years of experience as a Maintenance Electrician, preferably with a background in airfield lighting and airport electrical systems; including,
 - Two (2) years of experience managing a preventative maintenance program for airport electrical equipment and systems; and experience in overseeing and providing direction to electrical contractors.
- Completion of an M.D.O. Certification Program (both written and practical examinations) and extensive experience in the use of heavy equipment.
- Specialized training in Airport Safety and Security Requirements;
- Training in the use of the airless paint machine in order to perform line painting on runways, taxiways and aprons.

ADDITIONAL REQUIREMENTS

In addition to the above specific training, position requires the following licenses and certificates:

- Class 3 Driver's License with Airbrake Certification.
- Restricted Radio Operator's License.
- Airside Vehicle Operator's License/Permit.
- WHMIS Certification.
- First Aid and CPR certification.

ADDITIONAL REQUIREMENTS

Position Security (check one)

- 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

Indigenous language: Select language

- Required
- Preferred