



IDENTIFICATION

Department	Position Title	
Environment and Climate Change	Telecommunications Technologist II	
Position Number	Community	Division/Region
23-3419	Fort Smith	Forest Management

PURPOSE OF THE POSITION

The Telecommunications Technologist II (Tech II) provides specialized expertise and technical support for the analysis, implementation, and maintenance of terrestrial and satellite communications and environmental monitoring data collection systems.

This position works within a Legislative and Policy framework, and carries out its responsibilities in accordance with GNWT Acts, regulations, policies, and Departmental procedures.

SCOPE

The Forest Management Division (FMD) provides the policy, planning and regulatory framework for the stewardship, protection and sustainable management of forest resources on 80 million hectares of forested land in the Northwest Territories (NT). This role is pursued through interrelated programs, developed and coordinated by FMD and implemented through the department's five regions.

This headquarters position is located in Fort Smith, but activities are territorial in extent and support all five regions (Beaufort Delta, Sahtu, Dehcho, South Slave and North Slave). The position reports to the Telecommunications Technologist III, the Tech II works independently to assist with the planning, organising and delivering of operations of the Telecommunication unit. The position has a \$25,000 expenditure authority on the Communication and Suppression budgets.

The Tech II requires highly specialized knowledge and skills in spatial information, including remote communication systems, terrestrial and satellite communications and environmental monitoring data collection systems. The positions ability to successfully respond to time-



critical requests for information and services is of great importance. Guidance, and skills knowledge is given by the Telecommunication Technologist III.

The incumbent works within the guidelines of established standards and policies, provides specialized expertise, business knowledge and technical support for the implementation and maintenance of communications and data collection systems in the natural resources management functions of the Department. The incumbent has on-site control over the installation, implementation, repair, troubleshooting, and maintenance of technologies to implement and restore service. The functions and decisions are carried out in field environments with little or no technical support on-site (i.e. mountain top repeaters).

The position works directly with regional and territorial wildfire operations ensuring that electronic data requirements (i.e. radio, weather, detection) continue to be met during mission-critical activities. The decisions made by the position have the capacity to directly affect the ability of the department's wildfire response program to function, as functioning communication networks are a mission-critical requirement for field operations.

The incumbent works collaboratively with various federal, territorial and non-governmental clients to provide technical support and expertise on weather and lightning data collection and analysis in support of climate change monitoring activities.

Key contacts for the position include FMD, regional staff, and other Environment and Climate Change (ECC) divisions to provide operational support and technical expertise and to collaborate on priority setting and joint initiatives. Other contacts include other government departments and agencies on telecommunication issues and processes; with the private sector as a key partner in the supply and maintenance of technology supporting FMD and departmental programs. A strong network with other agency technologists can assist in troubleshooting and development.

The Tech II requires supervisory skills to oversee operations within the telecommunications unit and supervises casual staff assigned to the Telecommunication Unit in support of wildfire operations and other departmental programs. This position is expected to function in a team environment and as a result is required to work collaboratively with peers and subordinates to deliver according to developed work plans and operational requirements.

The role includes supervision, technical planning, support, and component level maintenance on wide/local area networks, radio communications networks, satellite data/voice networks, user-oriented communications systems, camera/ imagery systems and environmental monitoring hardware utilized by ECC in program delivery.



RESPONSIBILITIES

1. Assists with the departmental telecommunication operations administration.

- Receives guidance from the Manager and the Telecommunication Technician III; assist casual staff with orientation and mentoring and give feedback to supervisors at regular intervals.
- Researches and advises of potential opportunities to upgrade techniques or equipment or enhance existing infrastructure, equipment and operations.
- Work with regional staff and contractors to manage and maintain departmental telecommunications.
- Allocates work assignments to casual staff; ensures that activities are conducted in a safe manner and that personnel follow all Occupational Health and Safety and good workplace practices.
- Manages and prioritizes multiple projects; ensure the workflow in the section is maintained and provide competent and timely results to meet standards and needs for turnaround time.
- Monitors telecommunication equipment inventory and replenishes as required.
- Researches training opportunities to keep staff relevant in equipment and telecommunication standards and relays info to Manager and Telecommunication Technician III.

2. Plans and implements telecommunication and data transfer system requirements for departmental programs.

- Analyses telecommunications data transfer requirements and recommends appropriate network systems to meet emergency response objectives, in accordance with Departmental operation guidelines and procedures, and confirmed interagency communications planning and guidelines.
- Participates in the design, procurement, testing, implementation, and commissioning of telecommunications and data transfer hardware from system wide to the component level.
- Supports and develops detailed telecommunication project plans including terms of reference, resources, equipment, information/data requirements, timelines, project methodology, and deliverables.
- Evaluates equipment to determine problem areas and to assist in the planning of systems and service life of equipment.
- Analyses problems with leased networks for radio or data applications, coordinates repairs with line suppliers, and verifies system operation after repairs.
- Ensures compliance with the Radio Communication Act.
- Diagnoses and corrects operational and systems problems Identifies needs, analyses data sources to select appropriate sites and installs temporary repeater systems in specific areas.



- Assists with the evaluation of new electronic products for suitability in Department applications and makes recommendations on suitability.
- 3. Determines system requirements, installs, maintains, repairs and checks terrestrial radio communications systems and equipment, lightning detection network, weather network and camera detection network.**
- Performs planned, preventive, and corrective maintenance and system acceptance and performance evaluations on territorial telecommunications and data transfer systems.
 - Installs, removes, and replaces radio antennae, and associated equipment and components.
 - Repairs and maintains precision electronic test equipment and portable electric hand tools.
 - Screens and monitors of equipment repair by contractors and suppliers.
 - Analyses and interprets problems in electronic radio equipment on-site at field operations.
 - Performs acceptance checks and operational tests on purchased/leased equipment to ensure equipment meets or exceeds operational requirements.
 - Maintains, adjusts and calibrates electronic equipment, performs printed circuit board repair. Designs and constructs non-standard, specialized electronic equipment and/or designs, installs modifications to existing equipment to meet Department operational requirements, reduces costs, and improves systems reliability.
- 4. Provides expert technical advice and support to regional and territorial field operations.**
- Functions as an expert on all telecommunication matters including radio communication technology, lighting detection systems, weather station installation and data transfer, remote camera installation and data transfer.
 - Provides user documentation, information, and training for staff on the application, interpretation, and use of telecommunication equipment, weather stations, lightning detection network and remote camera network and associated applications.
 - Consults with regional staff to identify emerging issues and maintenance related issues.
 - Responds to equipment failures in the field, regional, and territorial locations to ensure timely repair or replacement of unserviceable equipment and is responsible to ensure successful restoration of service in a cost-effective manner. Field repair functions are conducted unassisted in remote areas.
 - Responds to field personnel to assess and direct first line maintenance on systems and portable equipment thereby preventing costly trips to the field.
 - Functions as a Communications Unit Leader on Incident Management Teams under the Territorial Incident Command System.



5. Participates in the review and assessment of new telecommunications technologies and identification of emerging issues and developments.

- Keeps up to date on current and emerging technologies, techniques, trends, and issues in the telecommunications field and fire management through participating in training, workshops, industry conferences, and review of technical literature.
- Consults with telecommunication data providers from cooperating agencies regarding issues related to reliability and compatibility of data and consistency of standards and practices.
- Evaluates and advises staff on specific concerns regarding reliability/risk of data.
- Researches and recommends options to meet current and evolving business needs/standards, such as revisions to procedures, alternate equipment and technology, systems enhancements, and customized analytical processes.
- Evaluates equipment to determine problem areas and to assess the efficacy of systems and service life of equipment.

6. Establishes remote communications and environmental monitoring network facilities.

- Assists with selection and acquisition of remote sites.
- Analyses geographic and other information to select appropriate sites in specific areas.
- Conducts site surveys to determine equipment location and construction techniques to meet operational requirements.
- Plans, organizes, and implements plans of construction with consideration of regulations and policy for construction work.

7. Under the direction of the Telecommunication Technician III, assists in the development of documentation, instructions and reports and provides training of ECC staff in the operation and use of radio communications systems.

- Writes operating instructions, frequency lists, and programming documents for radio users, and maintains records of work performed.
- Instructs Departmental staff and contract and extra personnel in operation of radio equipment and systems.
- Prepares annual and periodic reports pertaining to equipment maintenance schedules, status reports, field reports, site surveys, construction schedules, and inventories.
- Adjudicates Communications Canada examinations and licensing for Radiotelephone Operator's Restricted Certificate (Aeronautical).

WORKING CONDITIONS



Physical Demands

Strenuous physical effort lifting, carrying, moving heavy tools, and equipment in the shop environment or on field dispatch.

Climbing towers and other structures to access and maintain communications equipment, may require rigging towers to move equipment up towers.

Majority of the physical demands occur during the fire season (May to September).

Environmental Conditions

Travel by boat, all-terrain vehicle and in light aircraft (helicopters and fixed wing) will be required to access remote sites for installation and maintenance services requiring exposure to noise, and heat.

Extensive travel, extended hours of work and on-call demand in the field environment and at remote locations repairing and installing equipment.

Sensory Demands

The incumbent is expected to complete careful analysis and timely results-oriented decisions in a sole worker environment, in remote locations where errors in judgment, neglect of attention to detail in planning and executing activities may result in risk to the employee, or significant losses of critical services to the Department.

The position expects emergency response to communications demands or equipment failures.

Mental Demands

Travel and work away from home during the fire season (long hours and away from family).

The severity of the fire season determines the incumbent's workload, and this is a factor beyond the control of the incumbent.

The incumbent will be exposed to shifting priorities and tight deadlines with urgent situations, which significantly increases the level of stress in this position, especially during the fire season.

Given the nature of the organization and responsibilities for emergency response, flexibility is required for sudden changes in responsibilities and assignments such as call-outs for emergencies or supporting regional staff during times of increased wildfire activity.

In emergency response scenarios, a pressure to function at peak capacity with limited resources in a rapidly changing scenario.



KNOWLEDGE, SKILLS AND ABILITIES

- Knowledge of terrestrial/satellite communications technology, data transfer technology, data communications protocols, network technology environmental monitoring equipment, lightning location, and detection technology.
- Knowledge of common construction practices in permafrost and mountaintop environments.
- Knowledge of communications technology requirements in wildland fire response and emergency communications.
- Knowledge and abilities normally associated with not less than two (2) years' experience in radio communications.
- Technical knowledge of surface mount, multi-layer soldering methods, and soldering with microscopes.
- Demonstrated working knowledge of wireless communications principles and practices, including two-way radio (UHF, VHF, HF).
- Knowledge of environmental gathering monitoring systems and techniques.
- Basic knowledge of wildfire and emergency response operations and telecommunications requirements in those operations.
- Knowledge of construction principles, foundations, electrical, mechanical, and lightning arrestors.
- Knowledge of computer software and hardware in support of general operations and communications technology.
- Knowledge of wildfire weather and related instrumentation.
- Accurately diagnose problems, read and interpret schematics in electronic equipment, and carry out the necessary repairs and adjustments;
- Think conceptually;
- Instruct users on the capabilities and operation of radio equipment and systems;
- Communicate, understand, and respond effectively to others both verbally and in writing;
- Work at heights on towers, masts, and poles;
- Work with minimal supervision;
- Proactively plan and establish priorities, follow direction promptly and efficiently, and work with minimal supervision;
- Adapt to and work effectively within a variety of diverse situations and with diverse individuals or groups;
- Work co-operatively within teams to achieve organizational goals;
- Comprehend and trouble-shoot complex technical programs and relate the understanding to others;
- Listen to clientele needs to assess and effectively understand and respond to their needs;
- Establish and maintain positive working relationships and effectively resolve conflicts;



- Work cooperatively with co-workers, clients, and contractors in a multidiscipline resource environment;
- Excellent communication skills and the ability to multitask in a stressful environment and respond quickly to changing demands;
- Mechanical aptitude and capability;
- Work independently and exercise judgment and initiative as appropriate.
- For continuous personal development, ability to problem solve, ability and desire to improve operations; and
- To be results oriented and to identify and service clients.
- Ability to commit to actively upholding and consistently practicing personal diversity, inclusion and cultural awareness, as well as safety and sensitivity approaches in the workplace.

Typically, the above qualifications would be attained by:

Diploma of Technology in radio communications from a recognized technical institute, with at least two (2) years' experience in radio communications in a large area, multi-technology, and mobile network.

Valid Class 5 Driver's License and Passport is required. Restricted Radio Operators License is required.

Current climber and rescuer training.

Equivalent combinations of education and experience will be considered.

ADDITIONAL REQUIREMENTS

Incumbent must be willing and able to:

- Be on standby in accordance with operational plans;
- Work overtime hours with limited notice to respond to seasonal wildfire or other emergencies; and
- Complete mandatory training and remain current on emerging issues affecting telecommunications in wildfire and emergency management environments.

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