



IDENTIFICATION

Department	Position Title	
Environment and Climate Change	Telecommunications Technologist III	
Position Number	Community	Division/Region
23-11434	Fort Smith	Forest Management

PURPOSE OF THE POSITION

The Telecommunications Technologist III (Telecomm Tech III) is a senior position that leads the Telecommunication Unit (Unit) in support of territorial wildfire operations and other departmental programs. The position provides specialized expertise and technical support for the analysis, implementation, and maintenance of terrestrial and satellite communications, detection and environmental monitoring data collection systems. The Tech III supervises staff, directs the administration and operations of the Telecommunication Unit.

This position works within a legislative and policy framework and carries out its responsibilities in accordance with the Government of Northwest Territories (GNWT) acts, regulations, policies, and Departmental procedures.

SCOPE

The Telecommunications Technologist III is a headquarters position located in Fort Smith, but activities are territorial in extent and support all five (5) regions (Beaufort Delta, Sahtu, Dehcho, South Slave and North Slave) across the Northwest Territories (NWT). The position reports to the Manager, Logistics (Manager) and is the senior technical specialist in the area of telecommunications for the Department of Environment and Climate Change (ECC).

The Telecomm Tech III is responsible for the management and operation of four territorial networks: terrestrial radio, lightning detection, remote camera detection, and weather data collection. The four networks have a combined value in excess of \$4 million. The position manages an O&M budget of \$150,000 and a suppression budget of \$100,000 during the fire season.

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 (NWT). This role is pursued

through interrelated programs, developed and coordinated by FMD and implemented through the department's five regions.

The Telecomm Tech III is a subject matter expert with highly specialized knowledge and skill in spatial information including remote communication systems, terrestrial and satellite communications, detection equipment, and environmental monitoring data collection systems. The position's ability to successfully respond to time-critical requests for information and services is of great importance.

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

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

The position directly supervises two full-time (2) Telecommunications Technologists II (Telecomm Tech II), one (1) seasonal Telecomm Tech II, and additional casual hires as required. The position functions in a team environment and is required to work collaboratively with managers and staff. The role includes supervision, technical planning, support, and component level maintenance on wide/local area networks, terrestrial radio networks, satellite data/voice networks, user-oriented communications systems, camera/ imagery systems and environmental monitoring hardware utilized by ECC in program delivery.

RESPONSIBILITIES

1. Organizes and administers departmental telecommunication operations.

- Guides the Telecommunications Technologists within the Telecommunications Unit.
- Provides staff with orientation and mentoring and gives feedback to manager at regular intervals.

- Identifies potential opportunities to upgrade techniques or equipment or enhance existing infrastructure, equipment and operations.
- Works with regional staff and contractors to manage and maintain departmental telecommunications.
- Allocates work assignments between telecommunication staff, and 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 ensuring the workflow in the section is maintained and providing competent and timely results to meet standards and needs for turnaround time.
- Monitors telecommunications equipment inventory and replenishes as required.
- Ensures that training and certification are maintained up to date for the Telecommunications Unit staff and advises the Manager of the latest training opportunities to keep staff current in equipment and telecommunication standards.
- Verifies staff procurement and travel expenses monthly and assists the Manager on variance reporting.
- Develops and monitors annual performance evaluation objectives and tasks for staff.

2. Plans and manages telecommunications and data transfer systems requirements for Departmental programs.

- Analyses telecommunications data transfer requirements and recommends appropriate network systems to meet emergency response objectives, in accordance with departmental operations guidelines and procedures, and confirmed interagency communications planning and guidelines.
- Leads the design, procurement, testing, implementation, and commissioning of telecommunications and data transfer hardware from system wide to the component level.
- Develops detailed telecommunications project plans including terms of reference, resources, equipment, information/data requirements, timelines, project methodology, and deliverables.
- Liaises with telecommunications vendors to provide satellite telephone and cellular service to wildfire and emergency operations.
- Ensures equipment conforms to operational standards, and is in compliance with the *Radio Communication Act*.
- Evaluates new electronic products for suitability in Department applications and makes recommendations on suitability.

3. Determines system requirements, for terrestrial radio communications systems, 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.

- Audits equipment repaired 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, and calibrates electronic test equipment, printed circuit board repair, and electronic systems tuning.
- 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 the territorial 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 weather stations, lightning detection network and remote camera network and associated applications.
- Consults with regional and territorial 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, system enhancements, and customized analytical processes.

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. Develops documentation, instructions and reports and assists in 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 is required when lifting, carrying, moving heavy tools and equipment in the shop environment or on field dispatch. Position may require climbing towers and other structures to access and maintain communications equipment, and rigging towers to move equipment up towers.

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

Environmental Conditions

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

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

Extensive travel may be required for extended periods of time resulting in time away from home during the fire season and on-call demand in the field environment and at remote locations repairing and installing equipment.

The severity of the fire season determines the incumbent's workload and pressure to function at peak capacity with limited resources in a rapidly changing scenario and is a factor beyond the control of the incumbent; therefore, the incumbent will be exposed to shifting priorities and tight deadlines with urgent situations, 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.

KNOWLEDGE, SKILLS AND ABILITIES

- Knowledge of basic financial management, estimating costs of goods and project delivery, and financial planning process and ability to identify budget constraints and track project costs.
- 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 wildfire response and emergency communications.
- Knowledge of surface mount, multi-layer soldering methods, and soldering with microscopes.
- Knowledge of wireless communications principles and practices, including two-way radio (UHF, VHF, HF).
- Knowledge of environmental gathering monitoring systems and techniques.
- 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.
- Strategic planning skills with ability to anticipate or forecast future needs and trends.
- Knowledge of wildfire weather and related instrumentation.
- Ability to diagnose problems, read and interpret schematics in electronic equipment, and carry out the necessary repairs and adjustments.
- Ability to think conceptually.
- Ability to instruct users on the capabilities and operation of radio equipment and systems.

- Ability to communicate, understand, and respond to others both verbally and in writing.
- Ability to supervise, provide guidance and distribute tasks to meet deadlines.
- Ability to proactively plan and establish priorities, follow direction promptly and efficiently.
- Ability to adapt to and work effectively within a variety of diverse situations and with diverse individuals or groups.
- Ability to comprehend and trouble-shoot complex technical problems and relate the understanding to others.
- Ability to establish and maintain positive working relationships and effectively resolve conflicts.
- Mechanical aptitude and capability.
- Ability to work independently with minimal supervision and exercise judgment and initiative as appropriate.
- Ability to complete mandatory training and remain current on emerging issues effecting telecommunications in a wildfire and emergency management environment.
- Ability to work extended hours with limited notice to respond to seasonal wildland fire or other emergencies.
- 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:

A Diploma of Technology in radio communications from a recognized technical institute, with at least five (5) years' experience in radio communications in a large area, multi-technology, and mobile network.

Equivalent combinations of education and experience will be considered.

ADDITIONAL REQUIREMENTS

- Valid Class 5 Driver's License
- Valid passport
- Restricted Radio Operators License

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