

## STATE OF SOUTH DAKOTA CLASS SPECIFICATION

**Class Title: Senior Communications Maintenance Technician**

**Class Code: 40337**

**Pay Grade: GI**

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### **A. Purpose:**

Installs, repairs and maintains electronic broadcast and microwave equipment to ensure the proper and legal operation of broadcast equipment and quality of broadcast signals; or maintains and participates in the planning and design of State Radio systems, multiplex equipment, data and voice circuits for control of radio repeaters and provides technical and consulting support to clients using State Radio Services.

### **B. Distinguishing Feature:**

The Senior Communications Maintenance Technician is either identified by the FCC as the transmitter site's chief operator and may function as the chief engineer for one or more broadcast transmitters and microwave radio sites within a region of the state; or provides technical support, planning and design for State Radio Systems networks; assists in the installation of upgrades and new installations, and acts as regional support for all State Radio Services. Incumbents have a high degree of autonomy in diagnosing and repairing base station transmitting/receiving equipment and are expected to make even the most complex repairs without assistance or consultation.

The Communications Maintenance Technician performs preventive and routine maintenance on electronic broadcast, production, and microwave equipment or State Radio system elements either alone or under the direction of a Communications Engineer or Sr. Communications Maintenance Technician.

The Communications Engineer is responsible for the engineering and troubleshooting of public broadcasting transmitter sites or State Radio base stations, microwave sites and associated multiplex equipment.

### **C. Functions:**

*(These are examples only; any one position may not include all of the listed examples nor do the listed examples include all functions which may be found in positions of this class.)*

1. Diagnoses causes of broadcast and communications equipment failures and makes required repairs to restore systems to optimum operating service levels.
  - a. Performs diagnostic testing to evaluate system level and component failures.
  - b. Repairs or replaces defective components.
  - c. Improvises solutions and component assemblies for emergency repairs.
  - d. Coordinates the handling of equipment shipments to repair depots or vendor locations.
2. Installs and maintains state owned fixed microwave systems for Public Broadcasting, State Radio, DOT, and Forestry Services to ensure transmitting and receiving continuity of radio communications equipment.
  - a. Ensures the repair of loose or broken hardware, fine tuning adjustments of microwave multiplex and external transmission components, replacement of lamps, and adjustment of dishes to optimize the communications channels and baseband signals.
  - b. Performs preventive maintenance by using meters, setting operating levels, and checking for corrosion and grounding.

3. Installs, repairs and maintains SRC Dispatch Center Consoles, antennas and feed lines for mobile radio transmission on State Radio and Public Broadcasting towers;
4. Installs, repairs, and maintains the broadcast computer systems and computer controlled broadcast equipment to ensure proper television and radio production and broadcasting operations is achieved.
5. Performs routine and preventive maintenance on broadcast and communications equipment to prevent excessive and critical down time.
  - a. Establishes preventive and routine maintenance schedules.
  - b. Maintains towers, buildings and grounds.
  - c. Requests down time for preventive maintenance on transmitter equipment.
6. Writes requests for proposals (RFP) for new equipment bids to ensure most suitable and cost effective communications equipment is procured.
  - a. Completes specifications lists for RFP to meet equipment and system requirements.
  - b. Works with vendors and clients to research latest technology that is compatible with current infrastructure.
7. Maintains an inventory of spare parts and supplies to ensure repairs and installs can be completed as soon as possible.
  - a. Contacts vendors for price quotes and parts availability.
  - b. Completes and submits requisition forms.
  - c. Conducts inventories and documents results.
  - d. Completes equipment transfer and surplus forms.
8. Monitors and adjusts broadcast signal levels and completes transmitter operation and maintenance logs to comply with FCC, FAA, EAS and network standards and requirements.
9. Performs other work as assigned.

**D. Reporting Relationships:**

Reports to a Communications Engineering Supervisor or a manager. May direct the work of or serve as lead worker over Communications Maintenance Technicians.

**E. Challenges and Problems:**

Challenged to stay abreast of increasingly complex electronic systems and maintain fully operational broadcast and radio communications systems 24 hours per day.

Problems include repairing old equipment that is no longer being manufactured and the difficulties in obtaining parts and technical support; repairing a variety of new systems with multiple manufacturers and options; providing engineering support for productions both in studio and in remote locations; maintaining broadcast computer equipment that is essential to the many facets of the network operations; programming and installing radios, repeaters and antennas for special events and emergencies; and covering a large geographical area with a small staff.

**F. Decision-making Authority:**

Decisions include determining if equipment is operating within tolerances; what equipment adjustments to make; when to schedule preventive and routine maintenance; what methods to use in diagnosing and repairing malfunctioning equipment; and when repairs cannot be accomplished on site and must be sent to the manufacturer.

Decisions referred include approval of high priced replacement parts or diagnostic equipment; whether equipment can be shut down during normal operating hours to perform maintenance; and when additional staff is needed to assist in complex maintenance or repairs.

#### **G. Contact with Others:**

Daily contact with clients to assist with use, repair work and options. Weekly contact with manufacturers and vendors to discuss parts availability, cost and delivery times; with purchasing agents to discuss priorities, requisition status or changes; and with manufacturer's technical support staff for detailed technical assistance.

#### **H. Working Conditions:**

Base stations and systems are spread across the state and must be accessed in all types of weather conditions. May be exposed to high voltage, adverse weather conditions, handling of hazardous chemicals, working alone, and lifting heavy equipment. May be required to work long hours in emergency situations.

#### **I. Knowledge, Skills, and Abilities:**

Knowledge of:

- engineering principles,
- electronics at the component level,
- television and radio station technical operation and maintenance techniques,
- software programming for radio equipment,
- computer operational and technical skills,
- FCC and FAA rules and regulations.

Ability to:

- direct and supervise the actions of others when necessary,
- diagnose and correct technical problems,
- use oscilloscopes and frequency counters,
- work independently.