

BROADCAST ENGINEER

DEFINITION

Gives work direction and participates in the repair, fabrication, and maintenance of electronic and mechanical equipment used in production, post-production, and broadcasting and transmission of color television programs over the District's ultra-high frequency (UHF) and digital television stations.

TYPICAL DUTIES

Participates in and provides work direction to lower-level television engineering and production staff relative to the operation, installation, removal, and servicing of television production and digital and analog broadcasting equipment such as cameras, videotape recorders, audio recorders, switchers, amplifiers, studio lighting, encoders, transcoding engines, IT networking equipment, and a UHF digital and microwave system.

Troubleshoots equipment, the television station's network system and engineering problems, and makes repairs or provides work direction over equipment and system repairs.

Analyzes and diagnoses engineering and software problems using schematics and logic probes down to the circuit level.

Makes recommendations to the Director of Television Engineering and Technical Operations regarding operating procedures and the purchase or modification of equipment and related matters.

Assists in training operations staff in the set up and operation of equipment.

Operates and maintains scheduling, automation, and traffic system equipment to transfer data to master control.

Maintains, reviews, and makes corrections to Federal Communications Commission (FCC) logs.

Integrates newly acquired equipment with existing systems and fabricates parts as needed.

Monitors equipment and output to assure quality of transmission according to Federal Communications Commission regulations and maintains service records.

Uses operational manuals, schematic drawings, and diagnostic equipment and software to locate equipment malfunctions.

Wires, labels, and maintains the database for the television station.

Calibrates equipment using oscilloscopes, voltage meters, current meters, signal generators, digital logic analyzers, and audio and spectrum analyzers.

Makes the required detailed inspections of transmission and microwave equipment at the transmitter site.

Performs related duties as assigned.

DISTINGUISHING CHARACTERISTICS AMONG RELATED CLASSES

A Broadcast Engineer services and integrates existing and new equipment to support the operational needs of the KLCS-Channel 58 television station at the studio, transmitter, and remote sites; advises the Director of Television Engineering and Technical Operations regarding equipment conditions and purchase needs; provides work direction to lower-level engineering staff; and provides detailed project direction of vendor installation efforts.

The Chief Broadcasting Engineer supervises Broadcast Engineers in the operation and maintenance of television broadcasting equipment in the television station, studios, mobile or remote units, and at the transmitter and is responsible for compliance with related FCC regulations.

The General Manager, KLCS is the administrator responsible for the development and implementation of policies regarding the goals, purpose, and operation of Television Station KLCS and the administrative direction of the station's operation.

SUPERVISION

General supervision is received from the Director of Television Engineering and Technical Operations. Work direction is exercised over the work of lower-level production-crew members.

CLASS QUALIFICATIONS

Knowledge of:

- Installation, operation, and maintenance of video and multi-track audio production equipment
- Installation, operation, and maintenance of videotape for 1/2", 3/4", and Beta recording, electronic editing, and playback machines
- Design, installation, operation, and maintenance of master control, switching control, microwave, radio, and UHF analog and digital transmission systems
- FCC regulations, pertaining to broadcasting standards and practices and to technical operations
- Safety practices related to the operation and maintenance of electronic and mechanical equipment in the studio, in the field, and at the transmitter site
- Networking principles, protocols, and infrastructure including wiring principles, file structure, V, and routers
- Network analysis tools
- Video compression including MPEG 1, 2 and 4, DV, and HD-DV
- Windows and Macintosh based computer operating systems, including Windows 98, 2000, and XP
- Principles and practices of digital television
- Data, video, and audio diagnostic tools including IP network and Spectrum analyzers

Ability to:

- Diagnose and repair malfunctions in electronic and mechanical broadcasting equipment
- Give work direction and coordinate the engineering activities of the production crew
- Operate and service master control, switching control, microwave, radio, and main transmission UHF TV systems and color videotape machines
- Maintain accurate logs and records
- Communicate effectively, orally and in writing
- Schedule personnel for film equipment set-up and shoots
- Schedule traffic systems
- Set up and use Command and Control systems
- Program video and audio routers and control panels
- Wire, label, and maintain the database

Special Physical Requirements:

- Safely lift and carry equipment weighing up to 50 pounds
- Auditory and visual acuity to analyze color broadcast television signals
- Manual dexterity to safely operate hand tools
- Climb ladders measuring up to 16 feet
- Work in crawl spaces

ENTRANCE QUALIFICATIONS

Education:

Sixty semester units from a recognized college or university, preferably including 18 units of college-level courses in telecommunications, information technology, electronics, computer science, electrical engineering or a related field. A certificate of completion of specialized curriculum in telecommunications from the armed forces may be substituted for the required education or additional qualifying experience may be substituted for the required education on a year-for-year basis provided that the requirement of high school or evidence of equivalent educational proficiency is met.

Experience:

Five years of experience in a broadcast cable, or post production facility with responsibility for the maintenance of technical equipment used in color video production, recording, and transmission, and the maintenance of FCC-required logs and reports.

Special:

A valid California Driver License
Use of an automobile

FCC General Class License, Society of Broadcasting Engineers (SBE) Broadcast Technologist Certification, or higher certification is preferable.

SPECIAL NOTE:

Employees in this class may work any shift in a 24 hour, 7 days a week broadcast operation.

The class description is not a complete statement of essential functions, responsibilities, or requirements. Entrance requirements are representative of the minimum level of knowledge, skill, and /or abilities. To the extent permitted by relevant law, management retains the discretion to add or change typical duties of a position at any time, as long as such addition or change is reasonably related to existing duties.

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