



RF/MICROWAVE ENGINEER

Classified Range: ~~50~~ **57**

Board Approved: 01/10/08 Rev. TBD P. 1|5

Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are **not** intended to reflect all duties performed within the job; however, any additional duties will be reasonably related to this class.

SUMMARY DESCRIPTION

~~Under general supervision,~~ Performs specialized technical duties involving the design, installation, operation, maintenance, and modification of KVCR FM and TV transmitters, translators, microwave systems, satellite up/down links, and other related Radio Frequency (RF) systems; ~~performs related duties as required.~~

SUPERVISION RECEIVED AND EXERCISED

Receives limited direction from appropriate supervisor; refers only unusual decisions to supervisor. May provide technical and functional direction to assigned student workers.

REPRESENTATIVE DUTIES

The following duties are typical for this classification.

1. Perform a variety of complex engineering task to design and develop RF/Microwave systems, including maintaining the district's radio and television equipment, high power transmitters, receivers, microwave systems, satellite system, and related RF equipment.
2. Maintain and upgrade satellite communications and broadcast infrastructure, including antennas and all RF components.
3. Perform maintenance, installations and removals, and alignment of radio and television antenna systems on broadcast towers.
4. Monitor and maintain equipment in conformance with FCC rules and regulations.
5. Evaluate and make recommendations regarding the purchase of new equipment and materials; maintain inventory of equipment and parts.
6. Participate in the set-up and operation of remote broadcasting equipment.
7. Maintain records relating to equipment purchase, maintenance, proof of performance, and FCC compliance.
8. Prepare and maintain reports as necessary.
9. **May operate District vehicles.**
10. ~~Perform other related duties as assigned.~~ **Performs other duties related to the primary job duties.**



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MINIMUM QUALIFICATIONS

The following generally describes the knowledge and ability required to enter the job and/or be learned within a short period of time in order to successfully perform the assigned duties.

Knowledge of:

- ~~Electronic communication design~~
- ~~Uses, operation, and capabilities of radio and television equipment and test equipment~~
- ~~Electronic communication equipment / repair methods~~
- ~~Rules and regulations of the Federal Communications Commission as applied to radio and television operations~~
- ~~Safety practices of work involving high electrical voltage~~
- ~~Computers using DOS or Windows based operating systems~~
- ~~Knowledge and/or familiarity with OSHA tower safety regulations~~

Ability to:

- ~~Design, install, setup, operate, and maintain a variety of electronic communications equipment~~
- ~~Operate and repair the district's radio and television transmitter and microwave systems~~
- ~~Maintain reports and records~~
- ~~Follow written and oral directions~~
- ~~Establish and maintain cooperative working relationship~~

CORE COMPETENCIES:

Environmental Exposure Tolerance

- ~~Performing under physically demanding conditions~~
- ~~Accepts and endures the necessity of working in unpleasant or physically demanding conditions~~
- ~~Shows established adaptation and performance under unpleasant or physically demanding conditions~~

Safety Focus

- ~~Showing vigilance and care in identifying and addressing health risks and safety hazards~~
- ~~Maintains high level of conscientious safety practice~~

General Physical Ability

- ~~Using strength, endurance, flexibility, balance and coordination~~
- ~~Applying motor and perceptual abilities requiring no specific technique, training or conditioning~~

Professional and Technical Expertise

- ~~Applying technical subject matter to the job **~~
- ~~Knows the rudimentary concepts of performing the essential technical operations~~

Adaptability



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- Responding positively to change and modifying behavior as the situation requires**
- Accept and adjust to changes and the unfamiliar

Innovation

- Imagining and devising new and better ways of doing things**
- Fix what is broken; find solutions and fixes with resources at hand
- Finds new approaches to performing familiar tasks
- Create and invent new ideas; envision the unexpected, unexplored, untried**

Critical Thinking

- Analytically and logically evaluates information to resolve problems
- Follow guide, SOP or other step by step procedures for locating the source of a problem and fixing it
- May detect ambiguous, incomplete, or conflicting information or instructions**

Informing

- Proactively obtaining and sharing information

Mechanical Insight

- Chooses the right tool for the job
- Applies principles of mechanical advantage to get the work done
- Follows step-by-step assembly procedures, troubleshooting guides, and simple diagrams

Customer Focus

- Attending to the needs and expectations of customer
- Seeks information about the immediate and longer term needs of the customer
- Anticipates what the customer may want or expect in a product or service
- Works across organizational boundaries to meet customer needs **

Attention to Detail

- Focusing on the details of work content
- Shows care and thoroughness in adhering to process and procedures that assure quality
- Applies knowledge and skill in recognizing and evaluating details of work**
- Applies skilled final touches on products

Using Technology

- Working with electronic hardware and software applications
- Using basic features and functions of software and hardware

Valuing Diversity

- Shows acceptance of individual differences



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- Welcomes input and inclusion of others who may be different from oneself
- Shows understanding and empathy for the challenges of groups seeking inclusion or dealing with perceived discrimination

***Lead, Advanced or Senior Level Positions*

Education and Experience Guidelines

- A Bachelor's degree from an accredited college or university with major course work in electronics, broadcast media, telecommunications, or engineering with course work, including electronic system design, high voltage systems, digital systems, microprocessors and computers, transmitters and receivers, and antenna systems.

Experience:

- ~~Five (5) years experience on high power (30 kw minimum) UHF, liquid cooled, television transmitters, including two (2) years of experience on FM radio transmitters (2 kw minimum)~~
- Three (3) years of experience in maintenance and installation broadcast engineering, particularly with professional studio equipment, including designing equipment needs for a broadcasting studio, translators, and transmitters.
- ~~Three (3) Two (2) years of experience climbing and working on broadcast microwave systems on self-supported broadcast towers.~~
- ~~Two (2) years experience working with broadcast microwave systems.~~

Equivalency Provision:

- In the absence of a Bachelor's degree one (1) year of experience in maintenance and installation broadcast engineering, particularly with professional studio equipment, including designing equipment needs for a broadcasting studio, translators, and transmitters; or working broadcast microwave systems on self-supported broadcast towers may substitute for one (1) year of education.

License or Certificates:

- ~~Must possess FCC General Radiotelephone Operators License or an SBE equivalent.~~
- Possession of an appropriate, valid driver's license.

SPECIAL REQUIREMENTS

- ~~Possession of a General Class Radio Telephone Operator's License issued by the Federal Communications Commission or an SBE equivalent and ability to obtain a valid California Driver's License.~~

PHYSICAL DEMANDS AND WORKING ENVIRONMENT

The conditions herein are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential job functions.

Environment: Work is performed primarily in ~~a standard office setting~~ indoor and outdoor environments; occasionally travel from site to site.



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Physical: Primary functions require sufficient physical ability and mobility to work in an office setting; to stand or sit for prolonged periods of time; to occasionally stoop, bend, kneel, crouch, reach, and twist; to lift, carry, push, and/or pull light to moderate amounts of weight; to operate office equipment requiring repetitive hand movement and fine coordination including use of a computer keyboard; and to verbally communicate to exchange information.

Incumbents must be able to perform light manual work requiring finger dexterity and involving contact with high electrical voltage power equipment; **ability to push, pull, lift, and/or carry moderate to heavy amounts of weight lifting requirements of up to 50 pounds; to occasionally push, pull, lift, and/or carry heavier amounts of weight with or without assistance.** Duties will require work to be performed at various remote transmission sites. Must be able to climb tower of 200 feet or more. ~~May be asked to drive a district vehicle.~~

Vision: See in the normal visual range with or without correction; vision sufficient to read computer screens and printed documents; and to operate assigned equipment.

Hearing: Hear in the normal audio range with or without correction.