

**CITY OF SALEM
INSTRUMENTATION TECHNICIAN**

00504

NATURE OF WORK

This is skilled lead work in diagnostic and maintenance work electronic and limited energy control systems for the water/wastewater pump and lift stations through-out the City.

Work involves scheduling and/or performing preventive maintenance, installation, overhaul, and repair of electrical control and electronic instrumentation systems/devices and programmable controller monitoring systems. Assignments given to others are through oral and written instructions, sketches, or blueprints although work may result from inspection and troubleshooting. Assignments are received in the form of overall objectives as well as specific assignments. Work is ordinarily performed independently, subject to inspection in progress or upon completion by a supervisor. This is not a supervisory classification, however, work direction of others as a lead worker is expected.

This classification is distinguished from that of Maintenance Technician by the responsibilities to direct daily maintenance of the Distributed Control System monitoring pumps and controls which involves limited energy systems under 100 VA. This classification is distinguished from the PW Services Supervisor by the absence of full supervisory responsibilities and long-range planning and budget responsibilities.

ILLUSTRATIVE EXAMPLES OF WORK

(Any single position of a class will not usually involve all of the essential duties listed and many positions will involve essential duties which are not listed.)

Schedules and directs the preventive and corrective maintenance of the electrical, instrumentation, or electronic systems based upon supervisor's direction. Performs or oversees preventative maintenance activities according to standard and special instructions; instructs other personnel in routine servicing and maintenance activities. Standardizes system documentation, instrumentation and electrical systems; pilot tests new products or systems for potential enhancement to monitoring and regulating systems. Works with vendors and supervisor on system enhancements and documentation to system modifications.

Performs or oversees repairs to electronic or digital systems; participates in the design of alterations or adaptations to the systems such as installing programmable logic controllers, RTU's, Etc.; requisitions routine parts and supplies. Advises supervisor of special repair parts need or when supplies need to be restocked; tests and installs computer monitoring systems (i.e. Foxboro; Aquatrol).

Meets with supervisor to identify operation and maintenance priorities. Trains other technicians in repair and maintenance of equipment and facilities. Assigns and schedules work of other technicians based upon set priorities and through personal inspection of equipment and facilities. Periodically inspects and monitors work of other technicians.

Conducts regular maintenance on components of data communication system, inspects for potential breakdowns, maintains servicing and maintenance records, maintains supply of replacement parts. May occasionally erect and maintain antennas, towers and associated transmission line. Diagnoses faults in telecommunications equipment and lines; adjusts telemetry line levels and verifies data transmissions. Diagnose and repair malfunctions in radio communications equipment.

May maintain or repair conduits, wires, alarms, motors, switches, control panels, and circuit breakers required in making additions, extensions, or alterations in electrical systems. Repairs and replaces defective parts in motors, clocks, generators, pumps, switches, alarms, transformers, and other electrical fixtures and appliances; maintains diesel generators. Tests, locates, and repairs problems in electrical circuits and equipment.

Removes, overhauls, and reinstalls pumps, motors, compressors,, and other equipment. Performs routine overhaul and maintenance work on telemetering equipment. May help replace bearings in pumps, motors,, and other equipment. Installs new equipment and may help replace piping and perform other plumbing and pipe fitting tasks as required.

Maintains accurate maintenance records of equipment and apparatus serviced, time records of technicians, purchasing documents, documents system modifications and enhancements, and other related records systems.

Performs other related work as required.

WORK QUALIFICATIONS

Considerable experience as an electronic instrumentation systems technician or in a process control and maintenance position including some lead work and experience with microprocessor-based systems or distributed control systems; graduation from high school with supplemental course work in the electrical, electronic, or mechanical trades or any equivalent combination of experience and training which provides the following knowledge, skills, and abilities:

Knowledge of operational control systems, electrical/electronic motor controls in a water/wastewater pump system.

Knowledge of hydraulics, including principals of operation of all types of pumps and factors affecting performance.

Considerable knowledge of instrumentation systems, distributed control systems, UNIX programming, Foxboro I/A systems, or the ability to acquire such knowledge within six months. Proficient at diagramming motor control and digital instrumentation circuits, wiring diagrams, interpreting electrical and electronic schematics. Knowledge of practices, methods, materials, component parts and equipment used in analyzing and diagnosing electronic data communications equipment, control system installations, maintenance, repair and testing.

Knowledge of two-way radio, radio propagation, antennas, towers and transmission lines, telecommunications and instrumentation sensors preferred.

Knowledge of the standard practices, materials, tools, and equipment of the electrical and electronic trades and skill in the use and care of test equipment and tools employed in the repair of electronic, electrical and mechanical equipment.

Knowledge of the occupational hazards and safety precautions involved in performance of the electronic, electrical and mechanical trades.

Considerable ability to plan, assign, and monitor work performed by others and work independently to accomplish work assignments.

Considerable ability to understand and follow oral and written instructions and to read and interpret blueprints, sketches, computer software instructions, and schematic diagrams.

Considerable ability to recognize, diagnose, and adjust malfunctioning equipment and defects in electrical or electronic systems.

Possession of Restricted Energy Technician License (RET) from the Oregon Building Codes Administration. Possession of an Oregon Limited Maintenance Industrial Electrical License (LMI) is desirable. Must have a minimum of 4000 hours of documented electrical experience satisfactory to the Oregon Building Codes Administration to obtain the RET License.

Possession of a valid Oregon driver's license or Class C license and the ability to meet the City's driving standards.

Work involves field and office settings. Field conditions require work in a variety of weather conditions, call back evening and weekend work, working at heights and underground confined-space locations, exposure to sewage, fumes and chemicals with

safety precautions, requiring climbing, bending, twisting and sufficient flexibility and dexterity to move around pumps, motors and control systems to complete task requirements. Work involves frequent interruptions, some public contact, and deadlines. Office work involves writing and utilizing modern office equipment including personal computers, drawing diagrams, phone contact with vendors and suppliers, responding to alarms and monitoring equipment readings.

Possession of a current CPR and First Aid certification card is preferred.

Possession of a valid FCC radio operator license or similar technical certification is preferred.

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PERSONNEL DIRECTOR