DEFINITION
Under supervision of the Facilities Maintenance Supervisor, installs, tests, repairs, inspects and maintains metering and recording instruments, controlling devices, data logging and display equipment, communications and telemetry systems; prepares and maintains a variety of records; makes verbal and written reports of work activities; and performs related work as required.

The Senior Instrument Technician also coaches and trains less-experienced Instrument Technicians to develop advanced journey-level knowledge and competencies; may direct the work of an Instrument Technician and/or others on specific projects and standard work procedures; and serves as a technical resource to others.

DISTINGUISHING CHARACTERISTICS
Instrument Technician is the journey-level classification in the Instrument Technician series. Under general supervision within a framework of established policies and procedures, incumbents independently install, maintain, troubleshoot, repair and document a wide range of industrial instrumentation, electronic monitoring, metering, controlling and signaling devices used in the production, treatment and distribution of water, requiring basic knowledge of control systems and components including Supervisory Control and Data Acquisition (SCADA) and Programmable Logic Control (PLC) software and hardware. Assignments are given in general terms and are subject to periodic review while in progress and upon completion. The level of work spans the entire scope of industrial instrumentation and telemetry systems. There is some latitude for independent judgment and action in well-defined areas of work. Incumbents at both levels are subject to standby duty and emergency call outs.

This classification is distinguished from the Senior Instrument Technician which receives less supervision and performs more complex instrument troubleshooting, maintenance and repair duties, requiring a higher degree of trade knowledge and competencies. The Instrument Technician/Senior Instrument Technician classifications are flexibly staffed. Incumbents in this classification normally advance to the Senior level after three (3) years at journey level and with a performance rating of "meets requirements" overall on the most recent evaluation and demonstrated proficiency in the job requirements of the advanced journey-level classification.

Senior Instrument Technician is the advanced journey-level classification in the Instrument Technician series. Under general supervision within a framework of established policies and procedures, incumbents are fully qualified to troubleshoot and resolve the most complex telemetry, SCADA system and PLC software and hardware issues, requiring a higher level of knowledge and competencies; to coach and train less-experienced Instrument Technicians and others on work procedures; and may direct the work of an Instrument Technician and/or others on specific projects. Assignments are given in general terms and subject to periodic review while in progress and upon completion. There is significant latitude for discretion and independent judgment in the selection of work methods to achieve established goals. Incumbents at both levels are subject to standby duty and emergency call outs.
This classification is distinguished from the Instrument Technician by the complexity of work assignments, the potential impact of error, the level of independence with which assignments are performed and the limited level of supervision received. This classification is distinguished from the Facilities Maintenance Supervisor which supervises emergency and preventive maintenance activities including the repair and installation of equipment and materials used in the production, treatment and distribution of water.

**TYPICAL DUTIES**

**TYPICAL EXAMPLES OF DUTIES MAY INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:**

- Installs, maintains, repairs, overhauls, calibrates and tests a wide variety of industrial instrumentation that record, indicate, control and regulate level, flow, pressure, temperature, position and water analysis.

- Troubleshoots telemetry and process controller hardware, maintains functional knowledge of the operation of telemetry system software and hardware.

- Conducts periodic preventative maintenance inspections of all metering control instruments, diagnoses existing or potential trouble; cleans, lubricates, calibrates and adjusts as conditions indicate.

- Lays out, installs and places into service new metering, controlling and recording devices, calibrating as required; and may extend or connect related electrical circuits.

- Reads and interprets wiring diagrams, mechanical drawings and specifications related to installations or major repair work.

- Prepares and maintains a variety of records; makes verbal and written reports of work performed.

- May make estimates of labor, materials and supplies as needed to complete specific assignments.

- Performs other related work as required.

**Senior Instrumentation Technician** (In addition to the above tasks)

- Troubleshoots more complex telemetry, SCADA, and PLC software and hardware issues, develops recommendations for change/modification; implements and documents changes applied to the software and hardware.

- Performs repair and testing work requiring higher-level knowledge, skills, and abilities, and serves as a technical resource to others.

- Reviews engineering designs and modifications to control systems and recommends both technical and operational improvements.

- May direct the work of the Instrument Technician or others on specific projects, and coaches and trains less-experienced Instrument Technicians and others on the procedures of the work.
REQUIREMENTS
Any combination of education and experience that would likely provide the required knowledge, skills, and abilities is qualifying. A typical way to obtain the knowledge, skills, and abilities would be the equivalent of:

Education and Experience:
High school diploma or its equivalent; and

Instrument Technician: Four (4) years of journey-level experience as an Instrument Technician, performing skilled work in both mechanical and electro-mechanical repairs or electronic circuitry repair with at least two (2) years experience working on industrial instrumentation and controls.

Senior Instrument Technician: A minimum of seven (7) years of experience as an Instrument Technician with at least three (3) years at a level equivalent to an Instrument Technician with the District. Additionally, applicants for the Senior Instrument Technician position must pass District-approved proficiency evaluations for diagnosing and making changes to PLC and SCADA software and hardware.

Knowledge, Skills and Abilities:
Knowledge of: electrical and electronic circuits; mechanical linkage and telemetering systems; the basics of PLC and SCADA software and hardware; electronic schematic diagrams and blueprints; methods and techniques of calibrating electronic equipment; use and safe operation of a wide variety of standard hand and power tools and electronic and electric test equipment related to field and shop work; basic methods and techniques for troubleshooting and diagnosing equipment failure; laws, rules and regulations governing maintenance and operation of radio, telemetry and telephone equipment; safe work practices and the ability to identify workplace hazards and/or unsafe conditions and take appropriate corrective action.

Skill and Ability to: inspect, test, repair and install industrial instrumentation and controls according to established procedures and standards, read instruments accurately; work from and interpret wiring and mechanical drawings; safely use hand and power tools and equipment to test and calibrate instrumentation and controls; accurately estimate labor and materials costs; effectively use a computer for data management and to generate reports; prepare and maintain neat, accurate and complete records; communicate effectively both orally and in writing to technical and non-technical persons; establish and maintain effective working relationships; and perform essential duties of the job without causing harm to self or others.

Senior Instrument Technician: (In addition to the above)

Advanced Knowledge of: PLC and SCADA software and hardware.

Skill and Ability to: diagnose and make changes to PLC and SCADA software and hardware; safely and effectively operate a variety of specialized testing equipment; safely perform confined space entry tasks; coach, train and direct less-experienced technicians and others on specific procedures of the work; serve as a resource to others on the technical aspects of the work.

Additional Requirements:
- Must possess a valid California driver’s license and have a satisfactory driving record.
Senior Instrument Technician:
- Possession of an Instrumentation Society of America (ISA) Control Systems Technician Level 2 Certificate (CCST 2) is highly desirable.

Working Conditions/Physical Requirements:
The essential duties of these classifications require the ability to work outdoors under various climatic and geographic conditions with potential exposure to a variety of chemicals, noise, temperature extremes, humidity and hazardous equipment and machinery; to work overtime as needed and subject to standby duty and emergency call-outs as required; physically capable of crawling into confined spaces, responding to chemical spills, or climbing ladders/stairs to reach high places wearing respiratory protection equipment, including SCBA's; to complete necessary Continuing Education (CEU) as required to obtain, maintain and renew requisite certification.

The essential duties of these classifications require the ability to sit for extended periods of time in front of a computer; repetitive use of feet and hands to operate vehicles, equipment and tools; the ability to speak to verbally exchange ideas and information; to hear to receive verbal detailed information and instruction; to see at arms length to twenty feet with a good field of vision and the ability to distinguish basic colors; to walk, twist, bend, crawl, reach, climb ladders and stairs and work in positions and spaces that may be awkward or difficult to access; to lift objects weighing up to 50 pounds; and finger dexterity and hand strength to operate a computer and related hardware and to grasp tools and equipment on a daily basis.

Revised: 07/12
Approved:
Human Resources/Risk Manager