

**Sacramento Suburban Water District
Classification Specification**

Job Class: Instrumentation Technician

FLSA Status: Non Exempt

Supervisor: Superintendent (Production)

Effective Date: May 2021

Definition

Performs a variety of technical duties in the operation, installation, maintenance and repair of water production instrumentation systems.

Distinguishing Characteristics

This is the journey level classification, fully competent to independently perform a variety of technical duties related to the installation and maintenance of instrumentation systems, including installing, servicing, calibrating, and repairing electronic and pneumatic instruments and instrument systems such as chemical analyzers, pressure sensors, computer-based process control, data logging and remote control equipment. Incumbents are expected to be familiar with a diverse set of procedures and situations. Employees at this level receive only occasional instruction, assistance or direction as new or unusual situations arise and are fully aware of the District's operating procedures and policies.

Supervision Received and Exercised

General supervision is provided by a higher level supervisor or manager. Responsibilities do not include direct or indirect supervision of staff.

Examples of Essential Duties

The following duties are typical for this classification. Depending upon the assignment, the employee may not perform all of the listed duties and may be required to perform additional or different duties from those set forth below to address business needs and changing business practices. Management retains the right to add, remove, or change duties at any time.

- Performs comprehensive preventive and corrective maintenance on electrical, electronic, pneumatic or mechanical equipment utilized in control systems for water facilities including, but not limited to, flow meters, switches, thermocouples, transducers, variable frequency drives, analyzing equipment and telemetry equipment.
- Analyzes, tests, and troubleshoots process controls and programming to identify existing and/or potential issues affecting the water system, makes corrections as needed, and communicates accordingly.
- Performs hardware and software design modifications to existing field instruments, programmable logic controllers and communication links used in SCADA systems.
- Installs, develops, monitors and maintains Supervisory Control and Data Acquisition (SCADA) systems and related software.

- Performs troubleshooting and diagnostic work on a variety of instrumentation and electrical systems and equipment; makes periodic preventive maintenance inspections of all metering and control instruments and diagnoses existing or potential trouble; cleans, lubricates, calibrates, and adjusts as conditions indicate.
- Inspects, maintains, repairs, installs and/or tests electrical circuits, transformers, switches, hydraulic control valves, motor operated valves, motor starters, motors, generators, outlets, control panels, electrical and communication components of telemetry systems, cathodic protection systems and other related electrical systems.
- Lays out, installs, aligns, and places into service new metering and recording devices; calibrates as required.
- Prepares and maintains accurate reports and documentation detailing work progress, changes in operational parameters and red-line drawings of system changes or upgrades.
- Reads, interprets, and updates blueprints, schematics, wiring diagrams, software control descriptions, mechanical drawings, manuals and specifications in making installations or performing major work.
- Makes estimates of labor, materials, and supplies necessary for the performance of specific assignments; orders materials and supplies.
- Assists in training personnel as assigned; reports and/or corrects unsafe working conditions.
- Inspects and oversees work performed by contractors and vendors to ensure production facilities operate as intended.
- May inspect, maintain, repair, install and test emergency power generating equipment.
- Uses and maintains a wide variety of hand and power tools and test equipment related to the work; operates a truck on a daily basis.
- Complies with all District policies, procedures, rules and regulations including all safety standards; complies with federal, state and local regulations.
- Performs emergency response duties in accordance with state regulations for special districts; may work extended hours including early morning, evenings, and weekends outside of scheduled workday as needed to respond to after-hour emergencies.
- Performs work in hazardous work areas including high traffic areas, roadways, confined space vaults, and chemical rooms/sheds.
- Ability to safely perform work around live machinery with mechanically moving parts.
- Performs Standby Duty as scheduled.
- Maintains regular attendance and adheres to prescribed work schedule to conduct job responsibilities.
- Builds and maintains positive working relationships with coworkers, other District employees and the public using principles of good customer service.
- Performs related duties as assigned.

Minimum Qualifications

Knowledge Of:

- Materials, methods, equipment and tools used in the installation or repair of instrumentation and electrical systems in the water industry.
- Principles of operation and maintenance of various types of instrumentation and controls including mechanical, solenoid, hydraulic and bellows type actuators.

- Electrical and electronic circuits, micro-computer applications and telemetry systems related to the water industry hydraulics as related to the operation of recording and metering instruments.
- Operation and maintenance of a wide variety of hand and power tools and test equipment common to electrical and electronic work.
- Safe work methods and safety regulations pertaining to the work.
- AC/DC theory and control circuits.
- Codes, laws and ordinances pertaining to the work.
- Shop and electrical mathematics.
- Modern office methods, procedures, and equipment including common office computer software and database programs, including the Microsoft Suite of Programs (Word, Excel, Outlook, Access, and PowerPoint).
- Techniques and principles of effective interpersonal communication.
- Principles and practices of good customer service.
- Principles and practices of work safety.

Ability To:

- Work safely on electrical circuits up to 600VAC or 1000VDC.
- Diagnose mechanical, hydraulic, pneumatic, electrical and electronic malfunctions in instruments and telemetry systems.
- Operate motor vehicles and a variety of hand, power tools and equipment used in the instrumentation field.
- Read, comprehend, and write plans, specifications, Operation and Maintenance manuals, procedures, schematics, wiring diagrams, single line diagrams, logic diagrams, blueprints, mechanical drawings and electrical plans.
- Make extensive repairs and overhauls to metering and control instruments.
- Exercise independent judgment and initiate action without close supervision.
- Make estimates of labor, materials and equipment necessary to complete assigned jobs.
- Maintain records, document modifications made to systems and make oral and written reports and presentations.
- Be an integral team player, which involves flexibility, cooperation and communication.
- Operate a computer for word processing, database, and department specific software.
- Communicate effectively, both orally and in writing.
- Establish and maintain cooperative working relationships with coworkers, outside agencies, vendors, consultants/contractors and the public.
- Pass pre-employment physical, drug and alcohol examination and background check.

Experience and Education:

Any combination of education and experience which would likely provide the desired knowledge and abilities is acceptable. A typical way to obtain the knowledge and abilities would be:

Experience:

Four (4) years of journey level experience working on industrial instrumentation control and electrical systems.

Education:

High school diploma or equivalent.

License and/or Certificates:

- Valid California Driver's License issued by the California Department of Motor Vehicles and proof of good driving record as evidenced by freedom from multiple or serious traffic violations or accidents for at least two (2) years duration. The driving record will not contribute to an increase in the District's automobile insurance rates. Individuals who do not meet this requirement due to a physical disability will be considered for accommodation on a case-by-case basis.
- Possession and maintenance of:
 1. State of California Water Distribution Operator Certificate Grade D1, or ability to obtain within one (1) year of employment.
 2. California Water Environment Association (CWEA) Grade II Electrical/Instrumentation Certificate or an Instrumentation, Systems, and Automation Society of America (ISA) Level I Certified Control Systems Technician Certificate, or ability to obtain within one (1) year of employment.

Working Conditions and Physical Demands

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.

- Operates District owned or rented vehicles and equipment in the performance of field installations, maintenance and repair work.
- Travels frequently by automobile or truck in conducting District business.
- Communicates both written and orally with District management, coworkers, and vendors, both one-to-one, and in group settings.
- Regularly uses a telephone for communication.
- Regularly uses office equipment such as computers, copiers, and fax machines.
- Ability to carry, reach and lift supplies and equipment weighing up to 50 pounds.
- Ability to push, pull and maneuver supplies and equipment of varying weights and configurations.
- Ability to stoop, kneel, crouch, crawl and climb during field repair work.
- Ability to work in elevated positions and underground in confined places.
- Works out-of-doors as needed in all weather conditions with exposure to dust, dirt, water and significant temperature changes between cold and heat.
- Hearing within normal ranges with or without correction.
- Must wear CalOSHA approved protective footwear with a minimum ANSI I/75 or equivalent ASTM rating.
- Must possess good color vision.
- Occasionally required to change working hours or work overtime.

The specific statements shown in each section of this class specification are not intended to be all-inclusive. They represent typical elements and criteria necessary to successfully perform the job.

APPROVED:

Dated: 5/27/2021

By: 
Dan York
General Manager

Employee Statement:

I certify I have read, understand, and acknowledge receiving a copy of this class specification.

Employee Signature

Date

Revised

April 2017 – Instrumentation and Electrical Technician