

	Job Classification:	Electrician/Instrumentation Technician I / II / Senior
	Representation:	SEIU Local 1021 Union
	Wage Schedule Range:	15 / 17 / 19
	FLSA:	Non - Exempt
	Effective Date:	November 2009
	Revision Date:	February 2018, August 2018

Classification specifications, i.e. Job Descriptions are intended to present a descriptive summary of the range of duties and responsibilities performed by an incumbent in the classification. Furthermore, specifications are not intended to reflect all duties and responsibilities of an incumbent in the classification.

Summary

Under general supervision, performs a variety of skilled level installation, troubleshooting, maintenance and repair of electrical equipment and circuitry, pneumatic, hydraulic and electro-mechanical systems, and perform other duties as assigned; and perform other duties as assigned.

Supervision Received and Exercised

Direct and general supervision are provided by the Senior Supervisor Electrical / SCADA. Otherwise general supervision and direction are given by the Director of Operation or delegate specified to oversee this work. No direct supervision of staff is exercised by an Electrician/Instrumentation I or II. An Electrician/Instrumentation Senior may direct other Electrician/Instrumentation’s in the performance of specific project assignments, as instructed by the Senior Supervisor Electrical / SCADA, Director of Operations or delegate.

Essential Duties - *The following duties are typical for this position. Depending upon the assignment, the employee may not perform all of the listed duties and/or may be required to perform additional or different duties from those set forth below to address District needs and changing business practices. The omission of specific statements of duties does not exclude the position if the work is similar, related or a logical assignment to the class.*

- Inspects, installs, maintains, troubleshoots and repairs electrical equipment, lighting and safety systems, as well as power circuits, power generating equipment, control panels, switchgear, high voltage systems, and emergency systems in the District's water and wastewater operations and related facilities in accordance with electrical codes and standards.
- Performs pump maintenance and repairs on valve actuators, control circuits and variable speed and level control devices.
- Rebuilds and/or replaces, lubricates and maintains large and small electric motors.
- Maintains and repairs low, medium and high voltage switchgears.
- Performs maintenance on disinfection control equipment and valve actuators.
- Inspects and sets safety switches.

- Performs troubleshooting and diagnostic on a variety of electrical equipment and using appropriate diagnostic tools in use in the industry.
- Ensures the operational integrity of the electronic, hydraulic and pneumatic control systems, power circuits, control circuits and metering systems.
- Utilizes test equipment to perform repairs, calibration and inspection on controllers, power switching gears, distribution systems, lighting circuits, single/multi-phase power and control circuits; status and alarm circuits, and laboratory equipment.
- Requisitions parts and supplies and maintains a parts and equipment inventory.
- Performs confined space entry and rescue operations.
- May assist in providing instruction on the operation and maintenance of specialized District equipment for less experienced personnel or contract staff.
- Maintains tools, equipment, and supplies in a safe and well-organized condition.
- Performs routine alignment, configuration, calibration, and preventive maintenance on electronic equipment; calibrates a variety of equipment such as flow meters, level transducers, pressure transducers and other monitoring equipment to ensure operational integrity in compliance with manufacturer's specifications.
- Works with subcontractors, including electrical firms and PG&E, to ensure installation of major electric/electronic systems and components as directed.
- Upon completion of in-house projects, produces drawings/records of modifications made.
- Ensures required maintenance information on installed equipment or systems is provided and maintained in the District's preventive maintenance program.
- Establish and maintain an effective and cooperative working relationship with coworkers through knowledge of work, personal and professional conduct, and good judgment.
- Regular attendance and adherence to prescribed work schedule to conduct job responsibilities.
- Perform related duties as assigned or required for the ongoing operation of the District's business.

In addition, for the Electrician/Instrumentation Senior level, essential duties shall as entail the following.:

- Ensures treatment plant operational and maintenance manuals are updated as necessary following installation of new systems or equipment.
- Confers with others to ensure the District's equipment maintenance program(s) contain updated information and that District records include relevant electrical connection information.
- Where emergency response may be affected by new installations, notifies the Director of Operations, or the District's Safety Officer and appropriate other(s) of new systems/equipment.
- District's records of installed electrical systems are accurately maintained.

- Trains other Electrician/Instrumentation Technicians in troubleshooting newly installed/repared instrumentation system components and equipment.
- Assists in the planning of specification, selection, installation of electrical equipment.

Qualifications - Any combination of training and experience that would provide the required knowledge, skills and abilities is qualifying.

Knowledge of:

- Electrical theory, work methods, tools and testing equipment used in the installation, maintenance, calibration and repair of water and wastewater treatment and water distribution and wastewater collections, and electrical and electronic equipment and appurtenances.
- Knowledge of the National Electric Code (NEC) and other applicable codes, laws and ordinances typical to industrial/commercial electrical installation.
- Applicable laws, codes, regulations and safety precautions related to electrical and electronic installation, maintenance and repair work.
- Basic principles of operation of water distribution and wastewater systems, including applicable electronic equipment and controls.
- Principles of variable frequency drives, motors and control systems.
- Principles and practices of heating, ventilation and air conditioning systems maintenance and repair.
- Confined space entry procedures, and equipment.
- Practices of record keeping and standard office procedures.
- Techniques for providing a high level of technical service including troubleshooting to public and District staff, in person and over the telephone and other electronic devices.
- Reading and preparing electrical and electronic schematic diagrams and engineering drawings and specifications, including symbols and standard practices as related to electronic circuitry.
- Principles and practice of report writing and records maintenance.
- Basic knowledge of the theory and operation of SCADA systems and radio communications, PCLs, and other instrumentation associated with water and wastewater facility operations, such that he/she can identify problems in such equipment and communicate effectively with District specialists assigned to maintain these systems.
- Basic understanding of the electronic theory and practice of both analog and digital circuits.
- Principles of project planning, purchasing, budgeting, project development
- Principles and practices of effective customer service.
- Microsoft Office Suite programs for word processing and spreadsheets.
- Standard business practices such as letter writing, report writing, preparing informational materials in visual formats.
- English language usage, spelling, grammar, and punctuation.

Ability to:

- Perform skilled work for the implementation of a comprehensive electrical and electronic installation, maintenance, calibration and repair program.
- Skillfully and safely using and performing minor maintenance on the hand and power tools and testing equipment required to perform the work
- Read and interpret sketches, blueprints, schematic diagrams and equipment manuals.
- Perform a variety of technical support fabricating related to water and wastewater systems, instrumentation installation, maintenance and repair.
- Troubleshoot equipment problems, estimating materials, supplies and time required to complete the work.
- Interpret State, federal, and local codes and standards associated with electrical work.
- Maintain accurate of work performed and a parts inventory.
- Recognize potentially hazardous conditions on the job site or with the equipment.
- Prioritize own work and using independent judgment within procedural and safety guidelines.
- Use of test equipment including digital and analog ohmmeters, vibration meters, frequency counters, frequency generators, 35 MHZ O-scope, RF wattmeter, 4-20 ma signal generator, and valve actuator gear trains, voltmeters, infrared pyrometers, oscilloscopes, amp meters, and other equipment typically used in the industry.
- Maintain accurate records of work performed.
- Adapt to changing technologies and learn functionality of new equipment and systems.
- Plan, coordinate, and organize work to meet deadlines with accuracy, thoroughness, and attention to detail.
- Work independently and prioritize multiple tasks often under time constraints and with limited supervision.
- Read, understand and carry out written and oral directions in a clear, concise, and consistent manner.
- Operate a variety of automated office machines typical of a work environment such as a multi-function printer/copier/scanner machine, and fax machine.
- Operate a computer for the effective operation of the Department including word processing, database, spreadsheet, e-mail, and internet.
- Communicate clearly and concisely both orally and in writing with District staff, co-workers, consultants and the public in one-to-one and group settings.

Education and Experience – *Any combination of education and experience which would likely provide the necessary knowledge and abilities is qualifying:*

Electrician/Instrumentation I requires three (3) years prior experience in commercial/industrial electrical installation and troubleshooting and knowledge of electrical code.

Electrician/Instrumentation II requires six (6) years prior experience in commercial/industrial electrical installation and troubleshooting and knowledge of electrical code.

Electrician/Instrumentation Senior requires nine (9) years prior experience in commercial/industrial electrical installation and troubleshooting and knowledge of electrical code, with at least three (3) years of experience equivalent to the Electrician/Instrumentation II level. Experience in electrical maintenance and repair work related to water and wastewater treatment and water distribution and wastewater collection systems and facilities is highly desired.

Licenses and Certifications

All levels require a valid California Driver's License issued by the California Department of Motor Vehicles.

Electrician/Instrumentation I Must obtain a CWEA Electrical Instrumentation Grade 1 while in grade. A California Distribution Grade 1 certification is desirable.

Electrician/Instrumentation II CWEA Electrical Instrumentation Grade 2 and California Distribution Grade 1 certification (*Must obtain both certifications within 12 months*).

Electrician/Instrumentation Senior CWEA Electrical Instrumentation Grade 3 and California Distribution Grade 1 certification.

Physical Requirements

While performing the duties of this job, the employee is regularly required to walk long distances, stand, sit; exert considerable physical effort involving stooping/kneeling, pushing/pulling, climbing/balancing, lifting/carrying, bending, and performing other similar actions during the course of the workday. Incumbents require sufficient mobility to work in a field setting with exposure to a variety of weather conditions, slippery and uneven surfaces. While performing the job duties the incumbent is required to operate hand tools and equipment and transport materials and supplies weighing up to 95 pounds; use fine and gross motor coordination in using numerous maintenance, power, and hand tools, and equipment and machinery; reach with hands and arms; travel regularly by vehicle for District related duties; use standard office equipment such as computers, copiers, and FAX machines; hearing and vision within normal ranges with or without correction. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Work Environment

Work both indoors (generally in a typical office or warehouse setting) and outdoors are required. While performing the duties of this job outdoors, the working conditions are of a varying degree, from snow to extreme heat. Additionally, incumbents in this position will have exposure to cleaning supplies, solvents, dusts, and other outdoor environmental elements. While performing the duties of this job indoors, the working conditions are those of a typical office environment, with temperatures occasionally too warm or too cold, moderate noise levels and under lighting

conditions typical of an office. Travel between District facilities will be necessary via District vehicle for District related duties and activities.

Additional Requirements

- 18 years of age.
- Eligible to work in the United States.
- Must be available for regular weekly on-call, emergency standby, and to be called back and work emergency overtime as required.