CITY OF SANTA CRUZ
WATER FACILITIES ELECTRICAL/
INSTRUMENTATION TECHNICIAN II/III

Reports to:	**Water Production Field Supervisor**
Supervises:	**Provides lead duties to Utility Maintenance Technician and temporary workers**
Bargaining Unit:	**Service**

BASIC FUNCTION

Under general supervision, performs a variety of journey or advanced journey-level electrical maintenance work on the City's water treatment plant and remote pumping facilities.

DISTINGUISHING CHARACTERISTICS

The Water Facilities Electrical/Instrumentation Technician series is alternately staffed with the II and III classifications. The Water Electrical/Instrumentation Technician II is required to obtain the California Water Environment Association (CWEA) PM Electrical/Instrumentation Technologist Grade 2 certification and either a California Department of Public Health (CDPH) D1 or T1 certification within 24 months of date of appointment. The Water Department does not require further certification to remain in the Department; however, an incumbent who would like to advance to the III level may pursue a CWEA Grade 3 and either a CDPH D2 or T2 certification in order to qualify for promotion to the III level.

The Water Facilities Electrical/Instrumentation Technician II is the journey level classification of the Electrical/Instrumentation series. This classification is distinguished from the next lower classification of Utility Maintenance Technician in that the latter is the entry and training classification in the Water Facilities Section.

The Water Facilities Electrical/Instrumentation Technician III is the advanced journey level classification in the series and provides lead direction to Water Electrical/Instrumentation Technician IIs, Utility Maintenance Technicians, and temporary workers. This classification is distinguished from the Water Production Field Supervisor in that the latter is a supervisory level classification and is responsible for performing the most complex assignments for the Water Production Field Division.

TYPICAL DUTIES *(May include, but are not limited to, those duties listed below.)*

- Installs, tests, calibrates, and maintains all electrical systems and equipment such as electrical motors; high, medium, and low voltage manual and automatic motor control centers; panel boards and switch gears; automatic safety controls; pneumatic-electric controls for valve operations; liquid level control indicators, recorders, and alarms; electronic and impulse telemetering transmitters, transmission lines, rectifiers, receivers, indicators, and recorders for pump control, liquid level control and remote meter recording.
- Troubleshoots, maintains, and repairs high, medium, and low voltage electrical equipment and systems and hydro generator, solar, and emergency power systems.
- Performs emergency repairs to a variety of equipment as necessary.

- Prepares reports and maintains records, such as preventive maintenance tests and repairs.
- Operates a variety of test equipment and uses small hand tools in the maintenance and repair of electronic and related equipment and systems.
- Troubleshoots and repairs Remote Terminal Units (RTU'S).
- Programs and installs Programmable Logic Controllers (PLC'S).
- Uses portable computers to troubleshoot and repair instrumentation/equipment.
- Participates in and provides lead work direction to small crews of maintenance workers in maintenance work assignments; may train new personnel as required.
- Participates and leads in skills and safety training programs; learns and implements safety rules, regulations, and emergency procedures.
- Read blueprints, schematics, and construction design drawings.
- May order and maintain inventory control of parts and materials.
- May wire or re-wire new or existing facilities, structures, or equipment for service as required.
- May design electronic and electrical system components.
- Performs related duties as assigned.

Water Facilities Electrical/Instrumentation Technician III

- Organizes and maintains a computerized preventative maintenance program.
- Assigned to special projects, such as serving as liaison with Water Department engineers and other division employees, contractors, inspectors, etc. on operational and maintenance projects, treatment improvements, equipment upgrades, etc.
- May be required to troubleshoot, repair, and operate remote filtration facilities which includes but not limited to the Beltz Water Treatment Plant, the Loch Lomond Memcor Treatment System, and the future desalinization plant.
- Reviews works orders and inspects locations where work is to be performed, noting special equipment needs and difficulties which may be encountered; performs inspections and confirmations on various electrical system repairs and installations; orders necessary equipment and materials; requisitions materials, supplies, and equipment for electrical maintenance.

WORKING CONDITIONS

Position requires prolonged sitting, standing, walking on level and slippery surfaces, reaching, twisting, turning, kneeling, bending, stooping, squatting, crouching, grasping and making repetitive hand movement in the performance of daily duties. The position also requires both near and far vision when inspecting work and operating assigned equipment. The need to lift, carry and push tools, equipment and supplies weighing up to 100 pounds while wearing respiratory protection equipment is also required. Additionally, the incumbent in this outdoor position works in all weather conditions, including wet, heat, and cold. May use chemicals and cleaning products which may expose the employee to fumes, dust and air contaminants. The nature of the work may also require the incumbent to climb ladders, use power tools and noise producing tools and equipment, drive motorized vehicles and heavy equipment, work in heavy vehicle traffic conditions and enter confined spaces. Some positions require the incumbent to

work both in and around oceanic surf to perform assigned duties. The incumbent will be required to respond to after hours emergency call outs and to wear a uniform. Some of these requirements may be accommodated for otherwise qualified individuals requiring and requesting such accommodations. Performs assigned duties while wearing respiratory protection equipment and/or Arc Flash safety equipment.

MINIMUM QUALIFICATIONS

Knowledge:

- Theory and practice of electrical design, installation, repair, overhaul, maintenance, testing and troubleshooting of high, medium, and low voltage systems and equipment and electrical motors.
- Electronic, and electro-mechanical systems.

Skills:

- Basic Microsoft Office computer applications.

Abilities:

- Learn pneumatic and hydraulic systems.
- Troubleshoot, maintain and repair electrical equipment and systems, hydro generator, co-generation systems, and emergency power systems.
- Follow written and verbal directions.
- Read blueprints, schematics, and construction design drawings.
- Complete and maintain thorough and accurate records.
- Use software applications related to PLC programming and electrical schematics.
- Troubleshoot and repair Remote Terminal Units (RTU'S).
- Program and install PLC's.
- Effectively organize assigned tasks and work assignments.
- Use portable computers to troubleshoot and repair instrumentation/equipment.
- Recognize unusual or dangerous operating conditions and make sound judgments within established guidelines.
- Perform mathematical calculations.
- Communicate effectively orally and in writing.
- Work effectively as a member of a crew.
- Lead a small crew of employees.
- Act in a courteous and tactful manner with members of the public.
- Observe safety principles and work in a safe manner.
- Safely handle hazardous materials.

OTHER REQUIREMENTS

- Willingness to perform call-back or emergency work as required.
- Willingness to wear a uniform.
- Must reside within a thirty (30) minute response time by the end of probationary period.
- Successful completion of training as a forklift operator within one year of appointment.

EDUCATION AND EXPERIENCE

Any combination of education and experience that provides the knowledge, skills, and abilities combined with any required licenses is qualifying. A typical way to obtain the required qualifications is to possess the equivalent of the following:

Water Facilities Electrical/Instrumentation Technician II:

- High school degree or equivalent; and
- 2 years of electrical installation and repair experience, with some experience related to electronic instrumentation.

Water Facilities Electrical/Instrumentation Technician III:

- High school degree or equivalent; and
- 4 years of electrical installation and repair experience, with at least two years experience equivalent to that of the City's Water Facilities Electrical/Instrumentation Technician II

LICENSES/CERTIFICATES

- Possession at time of hire and continued maintenance of a California Class C driver's license and a good driving record.

Water Facilities Electrical/Instrumentation Technician II:

- Must obtain and maintain within 2 years of date of appointment:
    - CWEA certification for Electrical/Instrumentation Technologist Grade 2; and
    - Either a CDPH D1 or T1 certification.

Water Facilities Electrical/Instrumentation Technician III:

- Must possess at time of appointment and continue to maintain the following:
    - CWEA certification for Electrical/Instrumentation Technologist Grade 3 and either a CDPH D2 or T2 certification, or
    - State electrical license.[1]

[1] Must obtain CDPH D2 or T2 within 24 months of date of appointment.

DESIREABLE QUALIFICATIONS

- CWEA Electrical/Instrumentation or state electrical certification.
- Experience working at a Water Treatment Plant or other similar industrial environment.
- T1 or D1 certification or higher.
- Basic understanding of MS Productivity software, such as WORD, EXCEL, and Outlook.

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Career Ladder

- Water Facilities Field Supervisor
- *Water Facilities Electrical/Instrumentation Technician III* or Wastewater Facilities Lead Electrical/Instrumentation Technician
- *Water Facilities Electrical/Instrumentation Technician II* or Wastewater Facilities Electrical/Instrumentation Technician II
- Utility Maintenance Technician or Wastewater Facilities Electrical/Instrumentation Technician I