CITY OF OCEANSIDE

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JOB CODE: MAINT36, MAINT41
UNIT: OCEA

INSTRUMENTATION TECHNICIAN I
INSTRUMENTATION TECHNICIAN II

*Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are **not** intended to reflect all duties performed within the job.*

DEFINITION

Under supervision, to maintain, repair, inspect, plan, modify, design, install and calibrate instrumentation and SCADA control systems associated with water and wastewater facilities; to install, test and maintain field telemetering equipment; and to perform related duties as assigned.

CLASS CHARACTERISTICS

Instrumentation Technician I – This is the entry- level within the Instrumentation Technician series. This class is distinguished from the Instrumentation Technician II by the performance of the more routine tasks and duties assigned to positions within the series. Employees at this level are not required to have the more advanced knowledge associated with design functions and troubleshooting the host system. Employees in this class are required to obtain the California Water Environment Association (CWEA) Electrical/Instrumentation Technologist II Certificate within 24 months of employment. Advancement to the II level is based on: demonstrated proficiency in performing the more complex tasks; obtaining the minimum certification requirements; the organizational needs of the department. Advancement is at the discretion of the Water Utilities Director.

Instrumentation Technician II – This is the journey-level class within the Instrumentation Technician series. Employees within this class are distinguished from the Instrumentation Technician I by the performance of the full range of duties as assigned including the design of hardware and software upgrades, building displays and troubleshooting the host system, and maintaining all SCADA equipment. Employees at this level receive only occasional instruction or assistance as new or unusual situations arise, and are fully aware of the operating procedures and policies of the work unit. Employees are required to hold a CWEA Electrical/Instrumentation Technologist III Certificate. Positions in this class may be filled by advancement from the I level.

EXAMPLES OF DUTIES - *Examples of duties performed by employees in this class may not include all required duties, nor are all listed tasks necessarily performed by everyone in this class.*

Designs, assembles, installs and repairs instrumentation and SCADA systems, equipment, and components in the field and in the shop; installs and repairs PLC and IO modules, control panels, transmitters, limit switches, and electronic pressure level sensors; diagnoses, troubleshoots, updates, and repairs malfunctioning systems and equipment, calibration problems and other measuring, recording, and transmitting device failures; ensures safe and

reliable power to all process instruments; cleans, lubricates, and changes component parts; performs preventive maintenance on pump control panels; maintains calibration logs and writes reports; interprets and designs applicable computer software; modifies and implements computer software programs for data logging and control; maintains preventive operations records; blueprints, schematics and diagrams for a variety of water and wastewater systems; assists engineers on new projects; orders supplies and materials; interprets and analyzes trends and reports produced from historical data.

MINIMUM QUALIFICATIONS

INSTRUMENTATION TECHNICIAN I

Knowledge of:

- Operating principles and maintenance requirements of electrical equipment and instrumentation associated with water and wastewater facilities.
- Programs for preventive maintenance and record keeping on electronic equipment and instrumentation.
- Electronic and telemetering principles and practices.
- General principles and methods of water and wastewater facility monitoring and control.
- Principles and practices of instrumentation and calibration of process monitoring and control equipment.
- Occupational hazards and standard safety practices.
- Modern office procedures, methods and equipment including computers and applicable software applications.
- Principles and procedures of record keeping.

Ability to:

- Install, modify, design and repair equipment related to electronics, instrumentation control, telemetry and telecommunications.
- Calibrate and test a variety of systems designed to monitor and control treatment plant processes.
- Monitor and maintain the accuracy of calibration standards and equipment.
- Read, interpret and understand plans, schematics, technical manuals, diagrams, blueprints and drawings associated with water and wastewater systems.
- Develop basic design, assemble and install field and plant S.C.A.D.A. equipment.
- Plan and execute repair, maintenance, and installation of process monitoring and control equipment.
- Maintain detailed records and prepare clear and concise reports.
- Work independently and efficiently to carry out assignments.
- Communicate clearly and concisely, both orally and in writing.
- Understand and carry out oral and written instructions.
- Establish and maintain effective relationships with those contacted in the course of work.

Experience and Training Guidelines

Experience: A minimum of three years of increasingly responsible experience in the maintenance, repair and installation of instrumentation systems.

Training: Equivalent to the completion of the twelfth grade supplemented by college level course work in electronics or a related field.

License or Certificate:
- Possession of an appropriate, valid driver's license.
- Possession of CWEA Electrical/Instrumentation Technologist II certificate within 24 months of employment is required.
  - Candidate(s) who are selected for Instrumentation Technician I and are employed with the City of Oceanside at the date of appointment and fail to obtain their required certification within 24 months of appointment will revert to their previous classification without right of appeal, unless otherwise required by law. Candidate(s) selected for Water Distribution supervisor who were not previously employed with the City of Oceanside and fail to obtain their required certification within one year of appointment will be terminated from employment with the City of Oceanside.

INSTRUMENTATION TECHNICIAN II

In addition to the qualifications for Instrumentation Technician I:

Knowledge of:
- Basic operation and function of virtual computers.
- Functions of each hardware and software application in the SCADA system.
- Knowledge of motor controls.

Ability to:
- Install, implement and troubleshoot hardware and software upgrades for SCADA system.
- Maintain, troubleshoot, repair and upgrade SCADA equipment.
- Develop and implement HMI displays using iFix.
- Modify and write ladder logic programs to various PLC's.
- Maintain and troubleshot historical data applications software.
- Build and generate reports needed by various departments.

Experience and Training Guidelines

Experience: Five years of increasingly responsible experience in the maintenance, repair and installation of instrumentation systems.

Training: Equivalent to the completion of the twelfth grade supplemented by college level course work in electronics or a related field.

License or Certificate:
- Possession of an appropriate, valid California driver's license.
- Possession of a CWEA Electrical/Instrumentation Technologist III certificate is required.

WORKING CONDITIONS

Environmental Conditions: Office and field environment; travel from site to site; exposure to noise, dust, grease, smoke, fumes, gases, electrical energy, toxic materials, and inclement weather conditions; work in or with water.

Physical Conditions: Essential functions may require maintaining physical condition necessary for standing, walking sitting, kneeling or bending for prolonged periods of time; heavy, moderate or light lifting.