

ENVIRONMENTAL UTILITIES INSTRUMENT AND CONTROL TECHNICIAN I
ENVIRONMENTAL UTILITIES INSTRUMENT AND CONTROL TECHNICIAN II

DEFINITION

To perform work in the installation, testing, maintenance, calibration, repair and modification of digital, electrical and electronic system, automated instrument control mechanisms, and measuring devices used to power, control and operate water and wastewater treatment plants and related infrastructure.

DISTINGUISHING CHARACTERISTICS

Environmental Utilities Instrument and Control Technician I - This is the entry level class in the Environmental Utilities Instrument and Control Technician series. Positions in this class typically have little or no directly related work experience and work under immediate supervision while learning job tasks. The Environmental Utilities Instrument and Control Technician I class is distinguished from the II level by the performance of less than the full range of duties assigned to the II level. Incumbents work under immediate supervision while learning job tasks, progressing to general supervision as procedures and processes of assigned area of responsibility are learned.

Environmental Utilities Instrument and Control Technician II - This is the full journey level class in the Environmental Utilities Instrument and Control Technician series and is distinguished from the I level by the ability to perform the full range of duties assigned with only occasional instruction or assistance as unusual or unique situations arise. Positions in this class are flexibly staffed and are normally filled by advancement from the I level.

This class is distinguished from the Senior Environmental Utilities Instrument and Control Technician in that the latter performs the most difficult and responsible types of duties assigned to classes within this series including assigned responsibilities for the installation, maintenance and repair of electrical, electronic and digital systems and exercises technical and functional supervision.

SUPERVISION RECEIVED AND EXERCISED

Environmental Utilities Instrument and Control Technician I

Receives immediate supervision from an assigned supervisor; receives technical and functional supervision from -a Senior Environmental Utilities Instrument and Control Technician.

Environmental Utilities Instrument and Control Technician II

Receives general supervision from an assigned supervisor; receives technical and functional supervision from a Senior Environmental Utilities Instrument and Control Technician.

EXAMPLES OF ESSENTIAL DUTIES– Duties may include, but are not limited to, the following:

Install, maintain, configure, calibrate, inspect, test, modify and repair instrumentation control, recording, metering and alarm telemetry systems used in water and wastewater treatment plants.

Install, diagnose, troubleshoot and perform preventive and corrective maintenance on electrical switchgear, relays, process controls, alarm systems, transmitters, gauges, sensors, isolators, analyzers, flowmeters, transducers, uninterruptable power supplies, lighting, motors, starters, pumps, circuit breakers, power meters, switches, control wiring, protective relays, Ethernet switches, cameras and related electrical and electronic devices.

Clean, lubricate, and inspect electrical equipment and other instrumentation and control equipment; install wiring and conduit for new projects.

Design, install, configure, maintain, program, test, deploy, troubleshoot and replace programmable logic controllers (PLC), wiring, and fiber optic cabling; maintain process databases and programs, and program backup systems.

Interpret control strategies and PLC programs to diagnose process and equipment failures; recognize, identify and correct problems with control and instrumentation equipment; repair or replace faulty equipment as necessary.

Program, test and deploy PLC programs; interface PLC programs with Supervisory Control and Data Acquisition (SCADA) systems.

Coordinate with other divisions and departments regarding water and wastewater treatment plant operations; schedule and monitor the work of vendors and contractors ensuring work is being properly performed and is consistent with City standards.

Effectively utilize a Computer Maintenance Management System (CMMS) to plan, schedule, complete and document maintenance activities; maintain a variety of documentation including work order and maintenance logs.

Update electrical drawings, specifications, and procedures.

Maintain water production and sewage plant equipment such as motor control and automatic switchgear, storm and sewage pumps; install and maintain well starters and related automatic control equipment such as high-voltage circuit breakers, air switches, control wires and protective relays.

Participate in the design and engineering of electronic components and systems; set, test and repair all types of electric meters.

Respond to emergency and trouble calls.

Troubleshoot and repair network communications as related to Ethernet, serial, fiber optic and radio installation; diagnose potential problems and repair or replace equipment as required.

Test emergency generators at various City buildings; clean lubricate and inspect electrical equipment; install energy saving devices in air conditioners; repair air conditioner units as necessary.

Install, configure, and maintain control, video and communications equipment.

Set and service electrical voltage recording devices; locate underground electrical conductors to prevent damage; inspect and repair new and damaged buried cables; supervise contractors performing installation and repair work near cables.

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Operate equipment in a safe and efficient manner in a variety of hazardous environments including toxic liquids and gases and high voltages.

Build and maintain positive working relationships with co-workers, other City employees, and the public using principles of good customer service.

Perform related duties as assigned.

MINIMUM QUALIFICATIONS

Environmental Utilities Instrument and Control Technician I

Knowledge of:

Basic principles, methods, materials, tools and equipment used in the installation, testing, maintenance, operations and modification of electrical and electronic systems.

Types of tools, methods and materials used in electrical work.

Computer hardware and software.

Methods of recordkeeping.

Safe work practices.

Ability to:

Learn to perform technical work in the installation, troubleshooting, repairing and calibration of digital, electronic and electrical system automated instruments, controls and measuring devices associated with water and wastewater treatment.

On a continuous basis, know and understand operations, and observe safety rules; intermittently analyze problem equipment; identify and locate equipment; interpret work orders; remember equipment location; and explain jobs to others.

Intermittently, sit while studying or preparing reports; bend, squat, climb, kneel and twist when installing, repairing, and servicing equipment; perform simple and power grasping, pushing, pulling, and fine manipulation; and lift or carry weight of 50 pounds or less.

Understand and interpret written and oral instructions, electrical drawings, blueprints, plans and wiring diagrams.

Use and care for tools and equipment used in maintaining and repairing electrical and electronic devices.

Work safely under emergency and hazardous conditions.

Assist others in municipal electrical and electronic maintenance and repair duties.

Communicate clearly and concisely, both orally and in writing.

Establish and maintain effective working relationships with those contacted in the course of work.

Experience and Training

Experience:

One year of experience in the maintenance and repair of electrical equipment and systems related to an electric or service oriented utility or industrial plant.

Training:

An Associate's degree or 60 semester units of college level course work including 18 units in a major field of study and 21 units in general education from an accredited college, preferably with course work in electronics, computer science or a related field. Two years of related work experience can substitute for an Associate's degree.

License or Certificate

Possession of a valid California driver's license by date of appointment.

Environmental Utilities Instrument and Control Technician II

In addition to the qualifications for the Environmental Utilities Instrument and Control Technician I:

Knowledge of:

Complex principles of electrical, electronic and digital repair, troubleshooting, maintenance and system design.

Principles, methods, materials, equipment and tools used in the installation, testing, maintenance, operations and modification of electronics equipment.

Installation, operation, programming and maintenance of automated instrumentation and control systems, including PLCs, used in a water and wastewater treatment plant.

Safety training specific to working in an industrial setting including LO/TO, PPE NFPA70E, and confined space.

Ability to:

Independently perform technical work in the installation, troubleshooting, repairing and calibration of digital, electronic and electrical system automated instruments, controls and measuring devices.

Read and interpret operating and maintenance instructions, procedures, manuals, blueprints, drawings, equipment specifications, vendor service manuals, logic diagrams, electric schematics and piping and instrumentation diagrams.

Effectively use software applications related to process control, instrumentation and control systems, PLC programming, diagnostic and software backup programs.

Effectively train less experienced staff in troubleshooting, calibration, and repair tasks.

Experience and Training

Experience:

Two years of responsible electronic maintenance experience performing duties similar to that of Environmental Utilities Instrument and Control Technician I with the City of Roseville.

Training:

An Associate's degree or 60 semester units of college level course work including 18 units in a major field of study and 21 units in general education from an accredited college, preferably with course work in electronics, computer science or a related field. Two years of related work experience can substitute for an Associate's degree.

License or Certificate

Possession of a valid California driver's license by date of appointment.

05-09-20	Environmental Utilities Instrument and Control Technician I/II
02-20-19	
05-12-07	
04-15-06	
02-17-05	
01-18-99	
10-01-88	
06-09-80	Electrical Eng Tech I /II
05-16-77	Electrical Technician
07-01-79	Electrical Eng Tech
10-30-73	
-67	
-65	
-64	Electrical Estimator