



**APPROVED BY: THE CHIEF
ADMINISTRATIVE OFFICER**

EFFECTIVE: March 2005

CONTROL SYSTEMS TECHNICIAN I/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

To design improvements to, build modify, install, maintain, troubleshoot, repair, calibrate, inspect and test a variety of electronic, electro-mechanical, pneumatic, hydraulic, analytical, telemetric, supervisory control and data acquisition (SCADA), and analog and digital control devices and equipment found in water treatment and distribution operations; to ensure the accurate and efficient operation of system sensory devices and controls; and to perform a variety of technical tasks relative to assigned area of responsibility.

DISTINGUISHING CHARACTERISTICS

Control Systems Technician I

This is the entry level apprenticeship class in the Control Systems Technician series. This class is distinguished from the Control Systems Technician II by the performance of the more routine tasks and duties assigned to positions within the series. Since this class is typically used as a training class, employees may have only limited directly related work experience. Advancement to the "II" level is based on demonstrated proficiency in performing the assigned functions, and is at the discretion of higher level supervisory or management staff.

Control Systems Technician II

This is the journey level class within the Control Systems Technician series. Employees within this class are distinguished from the Control Systems Technician I by the performance of the full range of duties as assigned including analyzing and diagnosing faults in complex control systems, performing confined space entry functions for the completion of assigned tasks and serving as technical lead in the absence of higher level supervisory staff. 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. Positions in this class are flexibly staffed and are normally filled by advancement from the "I" level, or when filled by the outside, have prior experience.

SUPERVISION RECEIVED AND EXERCISED

Control Systems Technician I

Receives immediate supervision from assigned supervisory or management personnel.

Control Systems Technician II

Receives general supervision from assigned supervisory or management personnel.

ESSENTIAL FUNCTION STATEMENTS

Essential responsibilities and duties may include, but are not limited to, the following:

1. Design improvements to, build, modify, install, maintain, troubleshoot, repair, calibrate, inspect and test a variety of electronic, electro-mechanical, pneumatic, hydraulic, analytical, telemetric, supervisory control and data acquisition (SCADA), analog and digital control devices and equipment found in water treatment and distribution operations.
2. Analyze computer and telemetry error messages to identify hardware and software malfunctions; set computerized controllers to appropriate parameters.
3. Develop, document and recommend installation and maintenance plans and procedures; prepare schematics, blueprints and layout drawings.
4. Operate and maintain electronic test and calibration equipment including an oscilloscope, analog meter, digital multi-meter, frequency counter, signal counter, loop calibrator and pressure calibrator.

5. Work closely with engineering, operations and contract personnel to solve problems and determine needs; estimate labor and materials required to complete assigned tasks.
6. Perform confined space entry functions in the completion of assigned tasks; ensure adherence to established safety procedures and precautions.
7. Maintain a variety of accurate and detailed records of work performed; prepare clear and concise reports as requested.
8. Perform related duties and responsibilities as required.

QUALIFICATIONS

Control Systems Technician I

Knowledge of:

Basic theories, practices, procedures and methods applied to the installation, maintenance, repair and modification of electronic, electro-mechanical, pneumatic and hydraulic sensory and control systems.
Basic methods and techniques of troubleshooting and diagnosing equipment failure.
Principles of mathematics.
Methods and techniques of calibrating electronic equipment.
Principles and procedures of record keeping.
Principles of business letter writing and basic report preparation.
Occupational hazards and standard safety practices.
Pertinent federal, state and local laws, codes and regulations.

Ability to:

Learn to apply theories, practices, procedures and methods applied to the installation, maintenance, repair and modification of electronic, electro-mechanical, pneumatic and hydraulic sensory and control systems.
Perform job functions in a customer oriented environment when assigned to work teams.
Learn operations, services and activities of a control systems maintenance and repair program.
Learn to install, maintain, modify, repair and test a variety of electronic, electro-

mechanical, pneumatic, hydraulic and analog and digital systems.
Learn to diagnose problems in sensory and control equipment and recommend corrective action.
Learn to operate a variety of specialized electronic testing equipment in a safe and effective manner.
Learn to safely perform confined space entry tasks.
Modify and upgrade systems to meet operational needs.
Interpret and work from electrical diagrams and specifications.
Maintain accurate and clear records and prepare clear and concise reports.
Establish and maintain effective working relationships with those contacted in the course of work.
Communicate clearly and concisely, both orally and in writing.

Experience and Training Guidelines

Any combination of experience and training that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

Experience

One year of experience in the maintenance, installation and repair of electronic sensory and control systems is desirable.

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, or ability to obtain, an appropriate, valid California driver's license may be required with determinations made on a case-by-case basis at the time of job posting.

Control Systems Technician II

In addition to the qualifications for Control Systems Technician I:

Knowledge of:

Operations, services and activities of a control systems maintenance and repair program.

Operational methods and practices associated with water treatment process.

Operational characteristics of analog and digital sensory or control equipment.

Electronic analog and digital theory.

Theories, practices, procedures and methods applied to the installation, maintenance, repair and modification of electronic, electro-mechanical, pneumatic and hydraulic sensory control systems, SCADA, and telemetry system.

Use, operation, calibration and maintenance of a variety of specialized electronic control systems test equipment and tools.

Principles and procedures of confined space entry.

Ability to:

Analyze computer and telemetry error messages to identify hardware and software malfunctions.

Install, maintain, modify, repair and test a variety of electronic, electro-mechanical, pneumatic, hydraulic and analog and digital systems.

Diagnose problems in sensory and control equipment and recommend corrective action.

Operate a variety of specialized electronic testing equipment in a safe and effective manner.

Safely perform confined space entry tasks.

Experience and Training Guidelines

Any combination of experience and training that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

Experience

Four years of experience in the maintenance, installation and repair of electronic sensory and control systems.

Training

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

License or Certificate

Possession of, or ability to obtain, an appropriate, valid California driver's license may be required with determinations made on a case-by-case basis at the time of job posting.

WORKING CONDITIONS

Environmental Conditions

Field environment; travel from site to site; exposure to noise, dust, grease, smoke, fumes, gases and electrical energy; work in or with water, below ground, in confined spaces, on slippery or uneven surfaces or at heights on ladders.

Physical Conditions

Essential and marginal functions may require maintaining physical condition necessary for light lifting; walking, standing or sitting for prolonged periods of time; operating motorized equipment and vehicles.