

INSTRUMENT AND CONTROL TECHNICIAN

DEFINITION

To perform technical work in maintaining, installing, and calibrating digital, electronic and electrical system automated instruments, controls, and measuring devices to control, power and operate electric power plant equipment.

SUPERVISION RECEIVED AND EXERCISED

Receives general supervision from the Power Plant Operations & Maintenance Supervisor; may receive technical and/or functional supervision from the Power Plant Engineer.

May provide technical supervision to technical staff, as appropriate.

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

Perform corrective and preventive maintenance on electrical switchgear, relays, process controls alarm systems, transmitters, gages and other instrumentation and control equipment.

Perform routine troubleshooting activities; install wiring and conduit for new projects; use Computerized Maintenance Management System (CMMS) to plan, schedule, complete, and document maintenance activities and use of supplies.

Install, maintain, configure, calibrate, inspect, test, modify and repair instrumentation control, recording, metering, and alarm and telemetry systems used in an electric utility power plant.

Install, configure, maintain and replace programmable logic controllers (PLC), wiring and fiber optic cabling; maintain process databases and programs.

Interpret control strategies and PLC programs to check hard wired and PLC program-based control permissives to diagnose process and equipment failures; recognize, identify and correct problems with control and instrumentation equipment and repair, replace, or make related recommendations.

Ensure optimization of process controls and instrumentation by testing, re-installing, re-programming, upgrading, and performing necessary related research.

Monitor, test, and maintain air quality control and measuring instruments and devices to ensure environmental regulatory compliance.

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Coordinate with other divisions and City department regarding power plant operations as required; schedule and monitor vendors or contractors for necessary maintenance or modifications; prepare work orders for required preventative and corrective maintenance.

Prepare documentation and reports and maintain logs and records related to work performed, supplies used, other instrumentation and control system conditions, and regulatory compliance.

Make recommendations regarding plant operating efficiency; perform routine maintenance in preserving and cleaning the instrument, control, and electrical shop.

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

#### Knowledge of:

Principles and practices of electrical theory and electric circuits.

Operation and maintenance of automated instrumentation and control systems, including programmable logic controllers (PLC) used in an automated industrial processing environment.

Principles of the operation and maintenance of motor starters, adjustable speed drives, metering pumps, actuators, and related controls.

Electric utility operations and procedures.

Pertinent local, State and Federal rules, regulations and laws, especially as related to working in an electric power plant.

Modern office procedures and computer equipment including systems to update and report work order status.

Safe work practices.

Department policies and procedures.

Principles and procedures of record keeping.

Ability to:

Independently perform technical work in maintaining, installing, and calibrating digital, electronic and electrical system automated instruments, controls, and measuring devices.

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

Intermittently, sit while studying or preparing reports; reach, bend, squat, climb, kneel and twist when repairing or working on equipment; climb ladders/stairs and work at considerable heights; perform simple and power grasping, pushing, pulling, and fine manipulation; and lift or carry weight of 50 pounds or less.

Work on low and high voltage switchgear and motors.

Diagnose various instrumentation, control systems and telemetry problems; apply logical reasoning and implement solutions.

Use software applications related to process control, instrumentation and control systems; use PLC programming, diagnostic and software backup programs; save and restore programs and configurations.

Identify control system problems and recommend and/or take appropriate actions; read and interpret related gages and recording devices.

Use equipment and tools appropriate to the repair and maintenance of automated instrumentation and control systems.

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

Prepare written reports and correspondence; maintain files and records related to instrumentation and control activities and regulatory compliance.

Work assigned shift schedules; be available for call-back and on-call assignment.

Work unusual and prolonged work schedules during emergencies, seasonally-caused circumstances in varying weather and temperature conditions.

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:

Three years of responsible experience installing, maintaining, and repairing instrumentation and control systems in an industrial processing plant environment such as an electric utility, chemical plant, or oil refinery.

AND

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 major course work in electronics, computer science or a related field. Two years of additional related work experience can substitute for an Associate's Degree.

License and Certificate

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

05-14-18

02-09-13

09-10-05      Instrument and Control Technician