

## JOB DESCRIPTION

City of Patterson



Human Resources

## ELECTRICAL AND INSTRUMENTATION TECHNICIAN II

### JOB SUMMARY

*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.*

Under general supervision from the Electrical and Instrumentation Crew Leader or the Electrical and Instrumentation Manager, this classification performs a full range of duties related to the installation, alteration, maintenance and repair of the Department's electrical, mechanical and electronic equipment; performs difficult to complex technical work such as troubleshooting electrical, mechanical and electronic equipment associated with the Wastewater Treatment Facility, Water Distribution System, Sewer/Storm Collections pumping stations, Telemetry/SCADA system, Traffic Signal and Street Light Systems, and related facilities; and performs related work as assigned.

**The Electrical and Instrumentation Technician II** is the journey level classification in the Electrical Instrumentation Technician series. Employees in this classification receive occasional supervision or assistance as new, unusual or unique situations arise and are fully aware of the operating policies and procedures of the work unit. This classification is distinguished from the Electrical and Instrumentation Crew Leader in that the latter is the lead or specialist classification that troubleshoots more complex problems related to the design, testing, installation, maintenance and repair of electrical, mechanical and electronic equipment and telemetry systems; and provides direction in a lead capacity to Electrical and Instrumentation Technicians I/II and assigned Public Works employees.

### SUPERVISION RECEIVED AND EXERCISED

Receives general supervision from the Electrical and Instrumentation Crew Leader or Electrical and Instrumentation Manager.

This position does not routinely exercise supervision, but may provide guidance to a less-experienced Electrical and Instrumentation Technician I.

### ESSENTIAL DUTIES

*Typical essential duties may include, but are not limited to, the following:*

Installs, maintains, repairs, and calibrates digital and analog monitoring and control equipment.

Designs instrumentation and electrical systems and provides data and calculations on proposed systems.

Installs, maintains, repairs, and calibrates computer system hardware for a radio-based telemetry system, to control flow, temperature, motion and chemical feed.

Installs, repairs, and maintains supervisory and sensory control systems.

Repairs, maintains and calibrates level, pressure and flow equipment.

Maintains a variety of electronic control instruments used to operate electrical mechanical equipment; records data, indicates equipment status and activates supervisory control.

Maintains and repairs automatic control valves and associated control devices.

Effectively operates a variety of electronic testing equipment to calibrate, repair and maintain systems.

Maintains service records; and participates in the development of specifications for the requisition of parts and electrical equipment.

Efficiently operates a laptop or personal computer to log completed work, establish and maintain records required by state agencies and to retrieve equipment data.

Observes and ensures all safety regulations are followed; including Cal OSHA regulations related to confined space entries.

Monitors and tracks SCADA system functions, including system pressure, tank levels and alarms; adjusts system settings as required to maintain proper function.

Assists in the training and development of less-experienced staff such as an Electrical and Instrumentation Technician I.

Performs related duties as assigned.

## KNOWLEDGE, SKILLS, AND ABILITIES

**Thorough knowledge of:** Principles and practices of electrical and instrumentation diagnostics and repair.

**Working knowledge of:** Principles and practices of electronics/electricity/pneumatic and instrumentation as they apply to sensory controls.

**Knowledge of:** Standard and specialized practices, methods, tools, equipment, and materials used in the installation, repair, and maintenance of supervisory, sensory control systems used in water/waste water/storm and traffic signal systems; principles of radio based telemetry systems and tuning of microwave radios; occupational hazards, and standard safety precautions of the trade.

**Ability to:** Develop and implement a comprehensive preventative maintenance program for instrumentation and electronics equipment; estimate repair costs; read and understand technical drawings, specifications and maintenance manuals; effectively operate electronic/electrical-testing equipment; troubleshoot electrical and instrumentation control circuits; diagnose electrical and electronic failures and take an effective course of action to correct the problem; work safely with high voltage AC/DC wiring; perform mathematical computations as required in the maintenance of electrical and electronic circuits; effectively operate a computer to log completed work, and to establish and maintain records required by state agencies; utilize strong telemetry skills to analyze and retrieve data from equipment; respond to emergency conditions and use good judgment to make appropriate assessments and repairs; speak, read, and comprehend English at a level necessary to understand and execute oral and written instructions; establish and maintain effective working relationships with those contacted in the course of work.

## NECESSARY SPECIAL REQUIREMENTS

Must be 18 years of age or older.

Must successfully pass pre-employment examinations which may include various position related background, fingerprint, reference, medical, physical agility, second language ability, certificate or license verifications.

Must be able to provide proof of U.S. citizenship or legal right to work in the United States.

## **EXPERIENCE and CERTIFICATIONS**

Any combination of education, training and experience that would likely provide the required knowledge, skills, and abilities: Normally this would include:

**Education:** High School Diploma or GED equivalent supplemented by specialized training equivalent to an Associate's Degree in the diagnosis, testing, maintenance and repair of electrical equipment and electronic sensor systems.

**Experience:** Two (2) years of increasingly responsible electrical diagnostic, maintenance and repair work that includes at least one (1) year of specialized experience involving electrical and electronic telemetry, SCADA and related control systems; or one (1) year of experience performing work equivalent to an Electrical and Instrumentation Technician I with the City of Patterson.

**License or Certificate:** Possession of a valid California Class B driver's license, or ability to obtain within 6 months of appointment. Failure to obtain the required license within this period may result in release from probation.

Possession of an Instrumentation Technology Grade I certification issued by the California Water Environment Association.

Possession of a National Fire Protection Agency NFPA 70 Grade I certification issued by the National Fire Protection Agency.

Possession of a Traffic Signal Technician Level I Certification is desirable.

## **PHYSICAL REQUIREMENTS**

**Physical Requirements:** Position requires the ability to frequently walk, bend, stand, crouch, or climb for extended periods of time; lift and/or move job related equipment weighing up to 90 pounds; constantly use overall vision and color perception to read, write, and make observations; frequently use hands and fingers to grasp and hold objects and to operate hand and power tools; safely operate vehicles and heavy equipment; hear well enough to converse on the radio, telephone and in person; perform heavy manual labor for extended periods of time; and tolerate extreme fluctuations in temperature while performing essential functions.

**Environmental Conditions:** Work is performed in an office and field environment that may include exposure to loud equipment and machinery and occasional exposure to fumes and/or other environmental substances; essential duties require travel from site to site; with potential exposure to variation in temperatures and weather conditions; frequently exposed to electricity; and occasionally exposed to loud noise. This classification is assigned to the miscellaneous bargaining unit for labor relations purposed and is subject to overtime, callback, and standby assignments.

**FLSA Status:** Non-Exempt

**Revised:** August 2022