

**EL DORADO IRRIGATION DISTRICT**  
**Class Specification**

**CLASS TITLE: Senior Electrical and Instrumentation Technician**

**DEFINITION**

Under general direction, leads, oversees, and participates in performing electrical, electronic, mechanical, and electro-mechanical work; responsible for performing a wide variety of highly skilled tasks in the installation, repair, calibration, troubleshooting, optimization, and maintenance of District water and wastewater treatment plants, water distribution systems, recycled water systems, solar array, and hydroelectric power plant facilities; including electrical switch gear, motor control centers, variable frequency drives, analyzers, remote terminal units, software controlled units and equipment, programmable logic controllers (PLC), telemetry systems and associated components.

**DISTINGUISHING CHARACTERISTICS**

This is the advanced journey lead level in the Electrical and Instrumentation Technician series. Positions at this level are distinguished from other classes within the series by the level of responsibility assumed, complexity of duties assigned, independence of action taken, and by the amount of time spent performing the duties. Incumbents perform the most difficult and responsible types of duties assigned to classes within this series, including providing technical and functional supervision over assigned personnel. Incumbents at this level are required to be fully trained in all procedures related to assigned areas of responsibility.

**SUPERVISION RECEIVED AND EXERCISED**

Receives direction from assigned supervisor or manager. Exercises technical and functional supervision over assigned technical personnel.

**EXAMPLES OF ESSENTIAL DUTIES:** *the duties specified below are representative of the range of duties assigned to the class and are not intended to be an inclusive list.*

Leads, plans, trains, prioritizes, organizes, assigns and participates in the work of staff responsible for performing a wide variety of skilled tasks in in the installation, repair, calibration, troubleshooting, optimization, and maintenance of District water and wastewater treatment plants, water distribution systems, recycled water systems, solar array, and hydroelectric power plant facilities; including PLC, variable frequency drives, analyzers, remote terminal units, SCADA systems, software controlled units and equipment, telemetry systems and associated components of up to 600 volts.

Trains and verifies the work of assigned employees for accuracy, proper work methods, techniques, and compliance with applicable standards, codes, regulations, and specifications; ensures adherence to safe work practices and procedures pursuant to Federal, State, Local, and District requirements.

Develops schedules and methods to accomplish assignments ensuring work is completed in a timely and efficient manner; participates in evaluating the activities of staff, recommending improvements and modifications.

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Oversees and participates in repairing, troubleshooting, installing, optimizing, and maintaining low and high voltage electrical equipment and related devices including transformers, power panels, motor controlled cabinets (MCC), wire-ways, light fixtures, receptacles and disconnect switches.

Oversees and participates in repairing, troubleshooting, installing, optimizing, and maintaining various electrical, electronic, mechanical, and electro-mechanical components and devices including variable frequency drives, motor controllers, adjustable speed drives, relays, timers, electrical circuits, transformers, switches, lighting fixtures, motors, generators, outlets, control panels, electrical and communication components of telemetry systems, cathodic protection systems and any other related electrical/electronic systems utilized by District operations of up to 600 volts.

Oversees and/or participates in calibrating, repairing, troubleshooting, installing, optimizing, and maintaining electrical control systems and instrumentation including transmitters, meters, generators, counters, regulatory measurement devices, monitors, recorders, and recorders.

Monitors supervisory control and data acquisition (SCADA) systems; assists authorized programming personnel with SCADA and telemetry systems.

Oversees, participates and conducts audits, reviews, specifies, and designs complex electrical and electronic schematics, plans and improvement drawings to evaluate operational and maintenance requirements.

Oversees and participates in planning the installation of new or improved electrical and electronic systems, equipment, and machinery; leads and trains District staff on operation of new or modified systems; programs, installs, maintains, modifies, and upgrades software control programs which are utilized in PLC and operator interface devices.

Orders necessary parts to maintain equipment or construct replacement parts; coordinates repair and maintenance work with plant operators, supervisors, managers and outside agency technical personnel.

Prepares calibration, special studies, and work reports as necessary; provides technical advice and support to District engineers, plant operators, SCADA personnel, supervisors, managers and outside agency technical personnel; works closely with control systems design and engineering teams.

Provides functional and technical supervision to assigned staff performing electrical or electronic installations and repairs; evaluates and makes changes to improve training and performance of division staff. Assures implementation of District electrical standards in the field.

Builds and maintains positive working relationships with co-workers, other District employees, consultants, contractors, and the public using principles of good customer service.

Performs related duties as assigned.

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### **QUALIFICATIONS**

#### Knowledge of:

Advanced methods, techniques, materials, equipment, and tools used in installing electrical wiring, control devices and equipment. National Electrical Code and Electrical Safety Orders of Cal OSHA. Advanced principles of electronic, pneumatic, electro-mechanical controls and devices; telemetry and electronic installation, maintenance, operation, testing and repair. Operational characteristics of instrumentation, electrical, electronic, and mechanical equipment and components. Principles and practices of technical and functional supervision and training Arc Flash Safety gear and the use of equipment as required by NFPA 70E and Cal OSHA. Advanced electrical and electronic theory and practice as applied to process instrumentation and control equipment.

#### Skill/Ability to:

Lead, organize, and review work of staff; provide technical and functional supervision over assigned staff. Ability to work safely on District equipment of up to 600 volts. Independently perform the most complex and difficult installation, repair, troubleshooting, and maintenance of electrical, electronic, mechanical, and electro-mechanical equipment. Establish and maintain effective working relationships with those contacted in the course of work. Communicate clearly and concisely, both orally and in writing. On a continuous basis, know and understand operational activities and observe safety rules; analyze problem equipment; identify safety hazards; locate equipment; interpret work orders. Operate programmers, calibrators, measuring, and testing devices, hand tools, and equipment of the trade. Ability to maintain reliable attendance is a condition of employment, subject to applicable medical and disability leave laws. Intermittently, sit while driving; stand and walk while performing maintenance and operation activities; bend and twist to adjust equipment; kneel and squat to review work; perform simple and power grasping, pushing, pulling, and fine manipulation; and lift or carry weight of 40 pounds or less.

#### Experience and/or Education:

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

#### Experience:

Two (2) years of responsible journey experience similar to Electrical and Instrumentation Technician II with the El Dorado Irrigation District, or five (5) years of experience in the design, repair, installation and maintenance of electrical equipment such as instrumentation systems, transformers, switches, control panels, electronic components of telemetry systems and components in an industrial setting or as utilized in a water, wastewater treatment plant, water distribution system, recycled water system, solar array, and/or at a hydroelectric power plant

#### Education:

Equivalent to completion of the twelfth grade, supplemented by college or equivalent course work in electronics, instrumentation, control systems, or related field.

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License and Certificate:

Possession of, or ability to obtain, a valid California driver's license at the time of appointment. Individuals who do not meet this requirement due to physical disability will be reviewed on a case-by-case basis.

State of California Certification as a General Electrician or completion of a recognized apprenticeship in the electrical trade.

California Water Environment Association (CWEA) Grade II PM Electrical/Instrumentation Technologist within 18 months of appointment and Grade III PM Electrical/Instrumentation Technologist within 36 months of appointment as a condition of continued employment.

Employees in this classification whose job duties require internet connectivity or the use of a District laptop and air card while on standby must provide and utilize, at their sole expense, a functionally reliable personal internet connection or District provided reliable air card with a District-provided laptop to facilitate District stand-by business.

 _____ Human Resources Authority	<u>11/22/2017</u> Date
Established: 11/22/2017	
Revised:	
FLSA: Non-Exempt	
Unit: Safety	