

EL DORADO IRRIGATION DISTRICT

Class Specification

CLASS TITLE: Senior Hydroelectric System Technician

DEFINITION

Under general direction and as assigned, performs highly skilled technical duties involving the operation and maintenance of the District's hydroelectric plant; maintains, troubleshoots repairs and operates equipment associated with the hydroelectric plant and water conveyance system; and calculates and schedules the selling of power.

DISTINGUISHING CHARACTERISTICS

This is the advanced journey level in the Hydroelectric System 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. Employees perform the most difficult and responsible types of duties assigned to classes within this series, including providing technical and functional supervision over assigned personnel and perform difficult and complex work related to the operation and maintenance of the District's hydroelectric plant. Employees at this level are required to be fully trained in all procedures related to assigned areas of responsibility.

SUPERVISION RECEIVED AND EXERCISED

Receives general supervision from the Hydroelectric Manager. May exercise 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 this class and are not intended to be an inclusive list.*

Participates in the development and implementation of goals and objectives related to assigned section; establishes schedules and methods for maintaining and operating the District's water conveyance, water storage and irrigation water system, ensuring compliance with local, State and Federal regulations including FERC license requirements.

Participates in the planning, prioritization, assigning and reviewing of work of staff involved in the maintenance, operation and construction of dams, control works, spillways, pipelines, irrigation ditches and related facilities; analyze situations accurately and take effective action.

Plan, prioritize, and review the work of technical and professional staff; develop schedules and methods to accomplish assignments, provide and coordinate staff training, and work with employees to correct deficiencies; may provide input on performance evaluations.

Participates in the evaluation of operations and activities of assigned section; recommends improvements and modifications; prepares various reports on operations and activities.

CLASS TITLE: Senior Hydroelectric System Technician

Participates in developing and administering section budget; participates in the preparation of cost estimates for budget recommendations; submits justifications for equipment, materials and supplies; monitors and controls expenditures.

Participate, schedule and/or assign the troubleshooting of electrical control schemes and equipment, wire, modify, document and install equipment; compile materials lists.

Repair and/or replace broken or defective parts in motors, generators, pumps, circuit breakers, transformers, storage batteries, switchgear, controllers, contactors, switches and other fixtures and appliances.

Research and identify replacement parts. Work with, provide support to, and inspect the work of outside contractors.

Check and record exciter generator brush condition, relays and daily generator operations.

Maintain a variety of records including those for the Federal Energy Regulatory Commission (FERC).

Performs skilled maintenance tasks associated with the installation, testing, repair and preventative maintenance of mechanical, electrical, and the operational equipment associated with the District's hydroelectric plant including SCADA, communication, mechanical, and hydraulic equipment throughout the system.

Reads and interprets electrical schematics, blue prints and drawings.

Operates testing equipment, including but not limited to, protective relay test sets, circuit breaker timing test sets, DLRO meters, TTR meters, 4-20 ma calibrators, insulation testers (Meggers®), Hi Pot testers, analyzers, wattmeters and variable power sources.

Operates the District's hydroelectric powerhouse in accordance with PG&E and Cal-ISO protocols and contracts; calculates and determines load estimates and/or equipment requirements; monitors, controls and regulates power generation and water level conditions.

Operates remote controlled computer SCADA systems to monitor and control powerhouse and Forebay Reservoir.

Prepares lockout/tagout and switching orders to safely remove equipment for maintenance.

Constructs, designs, tests, troubleshoots, repairs and maintains a variety of electrical and electronic devices associated with the hydroelectric plant.

Tests, calibrates, installs, designs, and programs instrumentation, programmable logic controllers, relay controllers and other microprocessor equipment.

Respond to emergency situations and be on call as assigned.

CLASS TITLE: Senior Hydroelectric System Technician

Assists with system design and upgrades; coordinates with outside contractors and other District departments in the upgrade and overhaul of equipment.

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

Performs related duties as assigned.

QUALIFICATIONS

Knowledge of:

Principles and practices associated with the operation of a hydroelectric power plant. Skilled maintenance and repair of mechanical, electrical, and electronic equipment associated with a hydroelectric power plant. Knowledge of mathematics, algebra and Boolean logic to solve electrical and electronic problems. Safe work methods and safety regulations pertaining to the work. Principles and practices of instrumentation calibration and alignment procedures. National Electric Code and other pertinent local, State and Federal laws, regulations and rules.

Skill/Ability to:

Organize, implement and direct operations and activities related to the operation of hydroelectric facilities. Identify and investigate unsafe conditions and formulate response for corrective action. Recognize and correct unusual, inefficient or potentially dangerous operating conditions. Lead and respond effectively to system upset conditions and emergency situations. Assist with the coordination of the delivery of parts and supplies. Develop and recommend policies and procedures related to assigned operations. Calculate water flow, capacity, generation, and related values. Lead, train, assign, schedule and review the work of staff. Work independently researching and proposing solutions to technical problems of the most complex nature. Operate, maintain and repair mechanical, electrical and electronic equipment associated with a hydroelectric power plant. Effectively perform switching and scheduling operations. Read and interpret complex electrical diagrams. Use modern, precision and diagnostic tools and instruments. Keep accurate records and reports. 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 operations, and observe safe work practices, procedures, and regulations, including wearing protective equipment and safety devices; analyze problem equipment; identify and locate equipment; interpret work orders; remember equipment location; and explain jobs to others. Work in confined spaces. Ability to maintain regular and predictable attendance. Carry out responsibilities associated with standby. Intermittently, sit while studying or preparing reports; bend, squat, climb, kneel and twist when performing installation/repair of equipment; perform simple and power grasping, pushing, pulling, and fine manipulation; Must be physically capable of climbing ladders to a height of 50 feet, of working in cramped or awkward positions to repair equipment, and of lifting tools and equipment up to a weight of 50 pounds. Work overtime as needed on short notice. Must be willing to work outdoors in a variety of weather conditions.

CLASS TITLE: Senior Hydroelectric System Technician

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:

Five years of responsible experience similar to a Hydroelectric System II, or five years progressive responsible journey level experience that involved the operation, maintenance and repair of equipment associated with a hydroelectric power plant or similar facility.

Education:

Equivalent to the completion of the twelfth grade.

SPECIAL QUALIFICATIONS

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.

Possession of a certificate indicating completion of a formal apprenticeship program from an electric utility, state agency or military school or similar facility.

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 Manager	<u>11/2/2015</u> Date
Established: 01/28/2013 Revised: 10/30/2015 FLSA: Non-Exempt Unit: Safety	