



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

PUMP PLANT SPECIALIST (PPS)

Group-Section: Water System Operations - Various	FLSA Status: Non-Exempt Bargaining Unit: AFSCME	Classification: Operations and Maintenance Specialist Salary Grade: 48 Job #: T01
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JOB SUMMARY

Specialized in mechanical/electrical skills, experience, and a broad knowledge in the practices and procedures of maintaining and operating pump plants and associated large-scale water conveyance and distribution infrastructure including hydroelectric plants.

Specialized skills in operations and maintenance of pump plant, hydroelectric and other distribution equipment for optimal system performance and reliability. Advanced journey-level skills in predictive, preventive, and corrective maintenance of pumps, turbines, generators, transformers, motors, high voltage equipment, reservoirs and other large distribution appurtenances, including all related water and hydroelectric control and measurement systems.

Expertise and proficiency in routine operations to optimize large-scale pump plant equipment and systems during periods of fluctuation in water supply and demand, to ensure downstream service reliability.

Applies operational skills and judgment necessary to maintain reliable water and hydroelectric power flow during emergency situations and while routine preventive or corrective maintenance is being accomplished.

SUPERVISION:

Received:

Work is carried out with minimal and at times intermittent on-site supervision. Broad direction is given in terms of operations and maintenance objectives that may require self-initiated work planning, sequencing and coordination of material and tool resources. Limited detailed guidance and advice is available which may result in the modification of work in varied situations. Performance may be measured by the quantity and quality of work and operations and maintenance objectives.

Given:

As a lead may exercise technical and/or functional direction over assigned staff.

Provides on the job training and development of O&M Technicians I, II, III and IV through joint tasks, recommending classroom training, hands-on demonstration, and/or assisting in the development and implementation of training programs.

JOB DUTIES

1. Performs high-level maintenance tasks and activities at hydroelectric plants, pumping plants, and other distribution facilities.
2. Completes predictive, preventive and corrective maintenance associated with large motors, transformers, generators, protective relays and associated equipment such as programmable logic

controllers (PLC), circuit breakers, variable speed drives, as well as other electrical systems and related control equipment.

3. Performs predictive, preventive, and corrective maintenance, within prescribed standards and limits on complex equipment related to large diameter valves and pumping/generating plant equipment that are electrical and mechanical including hydraulic and pneumatic systems.
4. Utilizes advanced instrumentation to monitor the capabilities, limits, and effectiveness of equipment and processes of the water and power system.
5. Tests, calibrates, and maintains a variety of complex mechanical/electrical equipment to ensure optimal equipment service to maintain uninterrupted power and water delivery.
6. Assists with the planning, budgeting and coordination including procurement of materials for predictive, preventive and corrective maintenance, as well as unplanned outages, shutdowns or other emergency situations to minimizing equipment downtime or interruption of water flow.
7. Assist with operation of pumping plants and associated large-scale water conveyance and distribution infrastructure including hydroelectric plants.

EMPLOYMENT STANDARDS MINIMUM QUALIFICATIONS

Education and Experience:

High school diploma or GED, and a minimum of 5 years journey-level industrial electrical operations and/or maintenance position in a pump plant; or

High school diploma or GED, and a minimum of 5 years working in a journey-level maintenance position in a pump plant as an Operation and Maintenance Technician IV – Mechanical classification, and successful completion of the Electrical Cross-Training Directed Study Program.

Journey level experience as demonstrated by practical application of general and advanced techniques and practices specific to the operation, maintenance, and repair of mechanical systems in treatment or pump plants, conveyance and distribution, and/or power generation systems, and related apparatus.

Required Knowledge of: Theories and practices of mechanical and electrical equipment, electricity and electronics, and their application to the operation and maintenance of large-scale electrical/mechanical systems and equipment related to hydroelectric power plants and water distribution systems, infrared thermal imaging and other methods of flaw detection such as lubricant, vibration, and ultrasonic diagnostics as part of predictive maintenance to optimize equipment performance and life, contemporary power systems analysis and troubleshooting methods, including determination of failure causes, diagnostic analysis through failure mode, and root cause analysis, and ability to apply and guide others in adhering to safety practices and regulations for operating mechanical and electrical equipment, high voltage systems, hazardous materials, and associated tools and equipment, traditional analog and precision digital instruments to ensure critical alignments as part of diagnostic and predictive maintenance, including infrared cameras and monitors, laser alignment equipment, analog and digital micrometers, calipers, and other tools related to close tolerance analysis and work.

Required Skills and Abilities to: Understand and interpret electrical and mechanical engineering data and complex schematic diagrams necessary to implement predictive, preventive, corrective and improvement activities, interpret complex instructions, manuals, operating and maintenance procedures and specifications related to water utility and hydroelectric power systems and equipment, and experience to utilize tools and diagnostic equipment to test and monitor equipment condition as well as repair, install, and replace equipment necessary to meet water and electrical generation demand and/or capacity, use and maintain electrical/mechanical tools and equipment normally and traditionally used in hydroelectric plants, pump plants, treatment plants, and within water and power control facilities, applying methods, practices, and tools to ensure reliable operations for the movement of water, generation of power, and optimization of equipment demands within established limits and standards.

CERTIFICATES, LICENSES and REGISTRATIONS REQUIREMENTS

Employees in this position may be required to obtain and maintain the following certifications, licensing and registrations:

- Valid Drivers license from state of residency equivalent to a California Class A, B, and/or C with appropriate commercial license endorsements
- Crane Certification
- Forklift Certification
- MWD High Voltage Switching Certification
- Onsite Operator Certification
- Respirator Certification
- Water Distribution Certification Grade III
- Water Treatment Certification Grade II
- Welding Certification

PHYSICAL DEMANDS/WORK ENVIRONMENT

Expectations of Hours of Service, Emergency and Stand-by Service:

Employees in this position will be required to work off-shift hours and/or stand-by service to address operational needs and emergencies as required. May be required to work extended periods away from the normal reporting location.

Physical Demands:

Heavy tasks may require lifting and carrying items weighing up to 50 pounds, with intermittent need to lift and carry materials and/or equipment weighing up to 100 pounds with assistance. Frequently requires pushing, pulling, turning and positioning parts, assemblies, equipment and tools weighing as much as 100 pounds with assistance. May be required to lift and move heavy items with the assistance of others and with lifting devices such as jacks, hoists and cranes of varied types and capacities. Physical effort includes frequent walking, stooping, bending, reaching, standing, climbing, kneeling and sitting for long periods of time. At times may be required to use Self Contained Breathing Apparatus (SCBA) or other respiratory filtration and personal protection devices.

Work Environment:

Work is performed indoors and outdoors at large pumping, treatment, hydroelectric or control facilities, or associated with other assets, under all types of conditions including extreme temperatures, open and confined spaces ranging from crawl spaces to sub-structures as well as varied types of terrains. Job tasks frequently require working from heights and functioning from lifts, hoists, scaffolds, and cranes over surfaces ranging from earthen materials to concrete, steel and water. Work frequently is conducted in proximity to high volume/pressurized water, as well as exposed, electrically energized equipment

MWD

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including high voltage systems. The work environment often involves exposure to equipment and tools producing high levels of noise, as well as potentially dangerous materials, chemicals, and machinery that require careful adherence to extensive safety precautions, rules and regulations.

Job Title: Pump Plant Specialist

Job Code: T01

Adopted: 01/29/08

Revised: 2/21/17

Supersedes: 01/29/08

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