CASITAS MUNICIPAL WATER DISTRICT

JOB TITLE: Electrical & Mechanical Systems Specialist (Electrical)

REPORTS TO: Electrical & Mechanical Systems Supervisor

DATE: 05/05

Definition

Under supervision performs a variety of routine to very complex technical duties including the installation, maintenance, repair, and operations of specialized electrical equipment in support of the District's treatment, production and diversion operations. Performs scheduled and routine inspection, testing, cleaning, repairs, overhauls, and installation of industrial high voltage electrical motors, motor controls and equipment. Works on associated electrical circuits ranging from low to high voltage (2300 volts AC).

Distinguishing Characteristics

Level 1 – the entry-level classification in this series. This level is required to have basic knowledge and experience of fundamental theory and techniques used in a variety of electrical equipment operation, installation, and maintenance; of laws, rules, standards pertaining to electrical construction and maintenance. This level is supervised by the section's supervisor or levels 2 through 4 in the supervisor's absence.

Level 2 – the skilled semi-journey level classification in this series. This classification is distinguished from the Level 1 in that Level 2 classification performs a broader range of skilled work, requiring a much higher degree of trade knowledge, works under less supervision, and troubleshoots and resolves more complex problems. This level is supervised by the section's supervisor and by levels 3 and 4 in the supervisor's absence. This level is required to supervise lower level classifications and participate in the training of lower level classifications.

Demonstrated safety knowledge for working on or around 480 volt systems or smaller; using isolation switches, circuit breakers and associated electrical and mechanical equipment to properly "Lock Out/Tag Out" for the isolation of control, electrical, hydraulic, and mechanical systems; ability to identify and use proper personnel protective equipment; ability to verify safety using test equipment to ensure all conditions are safe.

Level 3 – The journey level classification in this specialty. This classification is distinguished from the 1 and 2 levels in that the Level 3 classification performs the most complex work on the most sophisticated electrical circuitry and equipment in the operation of the water system. It is further distinguished from the I and II levels in that the Level 3 classification has responsibility for accomplishing complex major projects with multiple elements, oversees the removal, replacement, and enhancement of electrical systems and associated equipment. This level is supervised by the section's supervisor and by level 4 classified employees in the supervisor's absence. This level is required to supervise lower level classifications and participate in the training of lower level classifications.

Demonstrated safety knowledge for working on or around 2300 volt systems or smaller; using isolation switches, circuit breakers, and associated electrical and mechanical equipment to properly "Lock Out/Tag Out" for the isolation of control, electrical, hydraulic, and mechanical systems; ability to identify and use proper personnel protective equipment; ability to identify safety using test equipment to ensure all conditions are safe.

Level 4 – Is the highest level of the specialty. In addition to meeting the level 3 requirements must also meet performance requirements of a level 2 positions in an additional specialty. This level is supervised by the section's supervisor. This level is required to supervise lower classifications and participate in the safety training of all classification levels.

Examples of Duties

E & M Systems Specialist (Electrical) Level 1,2,3

- Performs basic repairs and calibrations of electrical equipment.
- Assists in the maintenance and installation of switches, panels, circuit breakers.
- Uses measuring, calibrating, and testing instruments and hand power tools used in the trade.
- Assists in lay out and installation of conduit, boxes, switches, and wiring.
- Installs and repairs isolation grounding systems.
- Tests electrical wiring and equipment for continuity of circuits using testing devices such as ohmmeter.
- Performs basic preventive and predictive maintenance duties.
- Performs basic troubleshooting and repair on electrical circuits such as power, lighting, and motor controls.
- Documents and maintains records of equipment and repairs.

Level 2

- Analyzes and evaluates electrical systems operations to maximize system integrity.
- Develops and uses diagnostic problem solving techniques.
- Provides major and complex troubleshooting assistance to operations personnel and to less experienced E & M systems specialists.
- Knows and understands operating characteristics and uses of PLC,s.
- Under general supervision monitors/changes and adjusts PLC programming as required.
- Assists in diagnosing potential electrical trouble in controllers and associated instrumentation.
- Makes estimates of labor, materials, and supplies required for performance of specific assignments.

Level 3

- Personally performs the most complex problem diagnostics and resolution of electrical systems.
- Analyzes and evaluates bids on specifications for equipment and outside contracts.
- Researches current and emerging trends in electrical system engineering and makes formal recommendations on their application to the district's diversion, treatment, and production facilities.
- Assists in the design of electrical systems for new installations or upgrading of existing equipment.
- Researches and evaluates new operational methods, techniques and equipment for greater reliability and energy conservation.
- Directs the work of E & M System Specialist 1and 2.