

## **ELECTRICAL MAINTENANCE TECHNICIAN**

### **General Statement of Duties**

Performs difficult technical and skilled work in the operation, maintenance, repair, and replacement of machinery, equipment, and electrical systems in water pumping stations, storage tanks, water plant, and office buildings.

### **Distinguishing Features of the Class**

An employee in this class performs advanced journey-level mechanical and electrical work in the operation, maintenance, and repair of specialized equipment and machinery in water pumping stations, water tanks, storage tanks, and office buildings. Work priority is to keep pumps and electrical and communication equipment in working order to ensure the plant and distribution systems are operational. Work involves responsibility for maintaining and repairing a variety of pumps motors and other equipment including electrical, mechanical, hydraulic, and telemetry work. Work requires a knowledge of trade skills in electrical, mechanical, hydraulic, electronic, and plumbing areas, as well as water distribution knowledge. The employee is subject to hazards associated with electrical and mechanical operations including working in both inside and outside environments; in extreme hot and cold weather; exposure to various hazards such as loud noises, vibrations, moving mechanical parts, and electrical current; exposure to chemicals fumes, odors, dust, mists, gases, poor ventilation, and oils; and working in small enclosed areas and high places. The employee may be required to wear a respirator. Employees are also subject to on-call and callback work on nights, weekends, and holidays. Work is performed under regular supervision and is evaluated in terms of effectiveness in returning equipment to proper operating conditions within given time schedules and overall effectiveness of system performance.

### **Duties and Responsibilities**

#### **Essential Duties and Tasks**

- Makes regular visits to check the operation of pump stations, and assists with repairs needed at the water plant, storage tanks, and office buildings.
- Troubleshoots, diagnoses, and repairs parts or equipment due to failure; performs electrical, mechanical, and plumbing maintenance and repairs.
- Plans and participates in regular preventive maintenance inspections such as inspecting water pumping stations; checking and lubricating bearings and gear boxes; checking and replacing filters; cleaning out wet wells; packing pumps; and other preventive maintenance activities.
- Installs electrical wiring and repairs pumps, motors, fans, heaters, and vents.
- Maintains and repairs various types of pumps, motors, hydraulic systems, and other equipment; repairs and rebuilds valves that control the pressure system and flow of water through the piping system.
- Maintains above-ground and ground water storage tanks; monitors through telemetry system; mounts antennas and makes adjustments and calibrates water levels.
- Rebuilds and overhauls defective parts, machinery, and equipment; maintains and services electrical generators for emergency power sources during outages; dismantles and overhauls various equipment; cleans, replaces, and repairs gauges, engines, and other equipment.
- Installs electrical and Supervisory Control and Data Acquisition systems (control wiring) for pump stations; installs power supply wiring and conduit; follow manufacturer's instructions.
- Maintains office buildings and rental properties performing electrical and maintenance work on lights, electronic security gates, plumbing, and HVAC systems.

- Designs, lays out and fabricates and welds metals to make repairs to equipment and to install new equipment.
- Uses various hand and electrical tools, electrical meters and wiring cutters, and construction and maintenance equipment used in maintenance and electrical repairs.
- Inspects and services vehicle; maintains fluids, filters and tires; cleans vehicle. Maintains records of work activities.

### Additional Job Duties

Performs related duties as required.

### **Recruitment and Selection Guidelines**

#### Knowledge, Skills, and Abilities

- Considerable knowledge of the installation, repair, and maintenance of the mechanical, electrical, plumbing, and hydraulic components of pumping stations and plants.
- Considerable knowledge of electrical and maintenance and repair of motors, valves, meters, generators, and related equipment including Supervisory Control and Data Acquisition systems (control wiring).
- Considerable knowledge of the occupational hazards and necessary safety precautions of the work.
- Knowledge of the operations and operating characteristics of water pumping stations and water tanks, and knowledge of water distribution systems.
- Knowledge of water pressure regulating valves and pumping stations.
- Knowledge of the operation and application of personal computers to the operation and maintenance of related equipment.
- Knowledge of electrical wiring and parts and ability to diagnose and replace parts.
- Skill in the use and care of hand tools and equipment of the trade.
- Ability to use hand tools and electrical tools and equipment used in the work.
- Ability to detect malfunctioning pumps and motors by observation, sound, and chart readings, and to take proper remedial action.
- Ability to diagnose electrical system problems.
- Ability to read and follow schematic drawings, blueprints, and written and oral instructions.
- Ability to establish and maintain effective working relationships with co-workers and supervisor.
- Ability to prepare and maintain accurate records and prepare reports.

#### **Physical Requirements**

- Must be able to physically perform the basic life operational functions of climbing, balancing, stooping, kneeling, crouching, crawling, reaching, standing, walking, pushing, pulling, lifting, fingering, grasping, feeling, talking, hearing, and repetitive motions.
- Must be able to perform medium work exerting up to 50 pounds of force occasionally; and/or up to 20 pounds of force frequently; and/or up to 10 pounds of force constantly to move objects.
- Must possess the visual acuity to operate machines and equipment including close inspection of moving and small parts, use measurement devices, perform assembly and fabrication of parts, prepare maintenance records, to drive, and operate a computer terminal.

**Desirable Education and Experience**

Graduation from high school supplemented by courses in electrical, mechanical and/or plumbing trades and considerable mechanical maintenance and repair experience including pump and electrical repairs; or an equivalent combination of education and experience.

**Special Requirements**

Possession of a valid North Carolina driver's license.

Possession of an NC Electrical License or the ability to obtain NC Electrical License.