

**Essential Personnel**

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<b>DEPARTMENT:</b> Operations	<b>SUPERVISED BY:</b> Wastewater Operations Manager	<b>FLSA STATUS:</b> Non-Exempt
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**JOB SUMMARY:**

The Electrician oversees and performs skilled maintenance and electrical work, documentation development, and plan review for the installation, maintenance, troubleshooting, repair, replacement, and retrofit, of electrical supply, distribution, monitoring and control equipment, systems and instrumentation, and wiring systems related to the collection, treatment, and campus facility systems.

**DISTINGUISHING FEATURES:**

This is a single classification position, not part of a series, and is designated as Essential Personnel. This position reports to the Operations Manager and performs skilled technical tasks, operating independently with minimal supervision. The Electrician is fully skilled in performing installation and maintenance of electrical and control systems. The position performs recurring preventive maintenance (PM) work and corrective maintenance (CM) work in a variety of work situations and locations, requiring troubleshooting equipment and components utilizing systematic problem identification and elimination skills. The Electrician follows established District working and safety procedures but will also develop position-specific practices and procedures, including the development of electrical safety policies for the District. This position requires the ability and initiative to perform duties requiring a moderate to high degree of complexity. The nature of the work has potential to create service interruptions which may negatively impact the environment resulting in regulatory penalties and negative public image for the District. The Electrician is the main point of contact for maintaining, troubleshooting, and repairing all electrical and instrumentation matters, including the supervision of contracted work.

**MINIMUM QUALIFICATIONS:**

**Demonstrated knowledge of:**

- Electrical construction and maintenance practices and procedures
- The various types of wastewater systems, equipment, and materials including pumps, motors, control systems, generators, and related equipment
- Interrelationship between power supply, electrical components, and distributed control system
- Local, state, and national electrical codes
- Work hazards and safety procedures applicable to the work environment, including working on live circuits, pressurized systems, and in confined spaces

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**Skill In:**

- The practical application of electrical testing devices
- Troubleshooting and repair of faulty equipment
- Critical/logical thinking and problem-solving
- Troubleshooting and installing control circuits

**Ability to:**

- Use information technology and related applications to convey and retrieve information and to facilitate work activities
- Assess, evaluate, and monitor programs or projects for compliance with Federal, state, and local laws, regulations, and guidance
- Work cooperatively with others to complete work assignments
- Read and understand electrical plans and complex circuit schematics
- Compute electrical formulas
- Read and interpret engineering reports, construction plans, and specifications
- Understand and apply laws, policies, and procedures necessary to ensure the safety of the public, employees, the facilities, and the system infrastructure
- Understand and follow directions; effectively adjust to changing priorities; problem solve and multi-task; be decisive in making decisions
- Utilize a computerized maintenance management system to request, coordinate, and document work
- Communicate technical information both orally and in writing to audiences with varying degrees of understanding
- Analyze electrical problems and devise and carry out effective plans for repairing problems
- Diagnose and correct abnormalities and malfunctions in equipment and production processes
- Effectively communicate with the public, co-workers, supervisors, and subordinates
- Maintain a professional and respectful working environment
- Pass all required safety training classes and apply learned practices and procedures in the workplace
- Create sketches of circuitry layouts and other electrical installations as needed
- Purchase electrical parts, materials, and supplies as needed
- Maintain minimum inventories; perform record-keeping duties for parts and materials used

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- Use and operate hand and power tools required for the work in a safe and efficient manner
- Apply good judgment and practical knowledge to resolve unusual or irregular problems in the area of electrical work
- Apply academic fundamentals, including reading, writing, science, math, and perform basic mathematical calculations in varied work environments
- Use a personal computer and portable communication devices and appropriate software, including Microsoft Office products and CMMS
- Apply knowledge of occupational hazards and standard safety precautions necessary in electrical work

**EDUCATION & EXPERIENCE:**

Any combination of education, training and experience that provides the requisite knowledge, skill and abilities to successfully perform the duties and fulfill the responsibilities of the position. A typical way to achieve that would be:

- High school diploma or equivalent
- Completion of a formal electrical apprenticeship training program
- Two years of relevant work experience, including one year of journey-level industrial electrical maintenance
- Possession of a Journeyman Electricians License and Washington State Electrical (EL01) License

**WORKING CONDITIONS:**

This position works both outdoors and indoors, in all types of weather and environmental conditions, and throughout all facilities, including treatment plants and remote pump stations. Requires physical capability and mobility to navigate all types of surfaces and terrain, including open grates, slippery surfaces, uneven terrain, stairways, hazardous surfaces, and walkways, and the ability and willingness to work from ladders and scaffolding. There are hazardous work areas such as pits, underground vaults, and other confined spaces. Work areas may be near large-scale equipment. The work may involve strenuous manual labor, requiring physical dexterity and mechanical aptitude. Physical demands in this series include but are not limited to stooping, bending, lifting up to 75 lbs., sitting, standing, crouching, climbing stairs and ladders, reaching, twisting, and repetitive motion. There are many health and safety hazards associated with working with high voltage equipment and components. The Electrician may operate potentially dangerous tools and equipment. Wearing and/or using appropriate personal protective equipment (PPE) is required to perform specific tasks, and employees may

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be required to use a respirator. Due to the industrial nature of the wastewater systems and treatment plant, its materials, equipment, and technology, many safety and health hazards exist, including exposure to raw sewage and/or odors and potential exposure to toxic or flammable chemicals or gases. Required to report to work in emergency conditions, even when the District office is closed due to inclement weather. Corrected vision sufficient for computer use, reading of plans and O&M manuals, and monitoring gauges.

**TYPICAL DUTIES & RESPONSIBILITIES:**

The duties listed below, while not all-inclusive, are characteristic of the type and level of work associated with this position. Individual positions may perform all or some combination of the duties listed below, as well as other related duties. The District reserves the right to add, modify, or remove duties as appropriate to meet business needs.

- Inspect, maintain, troubleshoot and repair electrical systems and equipment to ensure they operate efficiently and effectively
- Perform all installation, maintenance, and repairs in a safe, timely and professional manner following all local, state, and federal code requirements
- Troubleshoot and perform maintenance and repair work on electrical and electronic equipment associated with pumps, motorized valve controls, emergency power generation, uninterrupted power systems, medium voltage switching and distribution equipment, lighting, and utility power distribution equipment, air compressors, aeration blowers, and variable frequency and DC motor control equipment
- Troubleshoot and repair Distributed Control System (DCS) and Programmable Logic Controller (PLC) two-wire alarm circuits and associated transducers
- Inspect components of industrial equipment for accurate assembly and installation and defects such as loose connections or frayed wires
- Utilize blueprints, schematics, manuals, and other specifications to plan installation procedures
- Order, test, inspect, and maintain electrical materials, tools, and equipment used to perform preventive and corrective maintenance and emergency repairs
- Exercise arc-flash safety protocol in accordance with NFPA-70E and observe all District, L&I, and WISHA safety requirements
- Research, design, and incorporate modifications in existing equipment and circuits
- Perform design, drafting, and construction of new installations and wiring
- Prepare work requests, specify budgetary needs

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- Complete and document preventive maintenance, including document or coordinate documentation of work, including current and existing installations
- Purchase and inventory supplies and critical spare components and materials
- Review electrical design drawings, specifications, and submittals
- Provide input for PLC programming, HMI screen development, and SCADA development for the wastewater treatment plant, pump stations, and flow meters
- Resolve problems of balancing electrical loads, peak loading, overloading, and phasing
- Diagnose motors for overloading and failure; perform voltage and resistance tests; calibrate solid-state circuit boards; replace failed electrical components in kind; set up and calibrate instrumentation systems
- Install new and upgrade existing electrical services and equipment; run conduit for fixtures, receptacles, control circuits, and lighting; select and install wires, accomplish hookups and test installation
- Document and record details of work completed in the computerized maintenance management system (MMS)

**Other.** Perform other duties as directed and assigned.

**RELATIONSHIP WITH OTHERS:**

This position has frequent contact with other staff members, vendors, manufacturers, and contractors. Regularly coordinates work activities and shares information.

**SUPERVISION:**

**Exercised:** Does not supervise others. May coordinate and direct the activities and work of assigned project personnel and/or external consultants and contractors involving electrical and instrumentation equipment and installations.

**Received:** This position receives work assignments and general supervision from the Wastewater Operations Manager, who typically reviews outcomes and gives advice and direction as needed. The work is assigned and reviewed through formal and informal communications, conferences, reports, and other documentation or discussion of problems as they occur, which may reference sketches or blueprints. Some work direction may be received and coordinated through the Operations Manager and/or the Engineering Director or Principal Engineer. The Electrician works independently and is spot-checked for quality and compliance with codes and safety standards. The employee's work is also subject to inspection by state electrical inspectors to ensure that work is code compliant and meets applicable safety and fire regulations.

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**SPECIAL REQUIREMENTS:**

- Possess a Journeyman Electrician's License and Washington State Electrical (EL01) License
- Possess and maintain a valid state-issued driver's license with a good driving record
- Reside within 45 minutes reporting time to the District Office or assigned reporting location within one year of the date of hire
- Pass and maintain all required health and safety training and certifications
- Maintain appropriate physical fitness to perform essential job functions
- Availability to work nights and weekends on an as-needed or emergency basis
- This position is designated as Essential Personnel and is required to report to work during all inclement weather events
- Final offer of employment is contingent upon successful completion of a reference check, pre-employment physical and drug screen