Position Description

Position Title:	**Electrician/Control Specialist**	**Position Status:**	**Regular Full-Time**
Supervisor:	**Public Works Director**	**FLSA:**	**Overtime Eligible**
Department:	**Sewer, Regional Sewer, Regional Water**		

Position Overview:

This position troubleshoots, installs, repairs, and maintains electrical equipment, pumps, motors, electrical controls, telephone system and radio communications for water, wastewater, and stormwater utility facilities. The work requires journey level knowledge of electrical and control concepts, principles, methods, codes, electronics, pneumatics hydraulics, programming and preventative maintenance plan development and implementation. Assignments are carried out independently and are performed at the direction of the Public Works Director, who establishes priorities and monitors work performed. This individual performs work related to the daily maintenance of all equipment at the treatment facilities, reservoirs, pump stations, interceptor and outfall line including: preventive maintenance and major maintenance projects, evaluating and correcting equipment malfunctions, maintaining records, training personnel and purchasing supplies. The Electrician/Control Specialist performs work related to the operation and maintenance of the computer and SCADA networks and periodically performs electrical and control work for other departments as specified by the Public Works Director. The Electrician/Control Specialist must respond immediately to equipment emergencies to minimize down-time and adverse impacts on operations. This employee will be called upon to assist with other duties as needed.

Examples of Job Duties:

The work includes varied electrician assignments involving installation, operation, maintenance, troubleshooting, and repair of electrical equipment and systems. Diagnoses and repairs malfunctions in electrical equipment or control systems such as pumps, motors, controllers, generators, air compressors or other electrical devices. Performs preventative maintenance, repair, installation, and calibration of electrical and electronic systems and equipment. Inspects new or renovated water, sewer, storm pump stations, treatment facilities and wells for quality of electrical work and conformance with electrical codes and project plans. Services and repairs electrical and control equipment under routine and emergency situations. Installs and wires electrical, control, and telemetry systems; runs conduits as necessary. Programs and updates computer logic in programmable controllers. Installs probes, solid-state controls, special circuits, and wiring modifications. Completes related paperwork, including maintenance schedules and logs, and updating wiring diagrams and schematics. Tests and maintains emergency generators. Reviews plans and specifications for electrical installations. Assists in coordinating electrical work by private contractors at new or renovated pump stations; serves as a resource for information regarding water, sewer, storm, pump/lift stations and treatment facilities. Installs lighting fixtures, power outlets, control devices, heaters, thermostats, computer cables, cathode protection equipment, etc.; replaces fuses and changes lamps in fluorescent, mercury vapor and incandescent lighting fixtures. Performs other related duties as assigned.

The Electrician/Control Specialist maintains and updates computer software and hardware and SCADA control programs in order to help the treatment facilities meet NPDES permit, Department of Ecology, Department of Health and other federal, state or local requirements. The Electrician/Control Specialist must posses a thorough understanding of the operational processes common to treatment facilities. A thorough understanding of computers, operating systems, Rockwell Automation Software, programming and PLC networking is needed. The ability to troubleshoot problems with information from computer generated logs and charts are required. Knowledge of other programming languages will be helpful. Computer and SCADA system upgrade needs are identified by the Electrician/Control Specialist during the annual budget preparation. Network tasks include: monitoring system performance by analysis of computer-generated logs and charts and responding to computer problems (diagnostics and corrective action). The incumbent specifies, purchases and installs hardware and software for desktop computers, networking and SCADA systems. The Electrician/Control Specialist performs custom programming using various software packages and programming languages. This individual will also organize and maintain proper backups of plant data and software to protect against loss. He/she also provides training with regards to the use of computer equipment and software to ensure proper use and accuracy of input. This individual is

frequently involved in the integration, interpretation and quality assurance of data collected by the SCADA system and plant personnel.

The Electrician/Control Specialist will be required to perform all work related to the daily maintenance and operation of streets, parks and the stormwater, sewer collection, potable and reuse water systems. Duties include, but are not limited to: the installation of water, sewer and stormwater mains/services; pump and lift station maintenance; cleaning, repair and sanding of streets; landscape, cleaning and maintenance of parks and other recreational facilities.

Working Environment:
This position requires considerable outdoor work with exposure to varied weather conditions, including snow, ice, rain, heat and cold. Other hazards include exposure to moving equipment, working in public right-of-way with constant exposure to traffic hazards, and exposure to burns, chemicals, gasses, electricity and high-pressure water or sewer lines. Biological hazards include pathogens present in sewage and sludge. Mechanical/physical hazards include rotating equipment (motors and pumps), operating equipment, high temperature and pressure systems, slippery surfaces, and oxygen deficient atmospheres. Personal protective equipment is available for use to minimize exposure to these hazards. The individual may be required to work on slippery, muddy, or wet surfaces, in ditches or trenches, confined spaces, and use equipment such as jackhammers that would produce intense vibrations. This position requires frequent driving in varied weather conditions. The Electrician/Control Specialist may occasionally work with electrically energized lines when power cannot be disconnected. This individual may be required to work in confined spaces and areas with potentially hazardous atmosphere or at heights with ladders, boom trucks or on catwalks.

Knowledge & Abilities:
This position requires knowledge of:
- Procedures, practices, methods, materials and equipment used in construction, wells and treatment plant operation, maintenance and repair of pump stations and lift stations
- Advanced electricity, reservoir and pump station controls and telemetry, pumps and pump controls and the ability to repair them
- Operation and characteristics of utility systems including motors, control systems, and related equipment
- Methods and techniques of installation, maintenance, and repair related to electrical equipment and facilities
- Operational characteristics of mechanical equipment and tools used in electrical work
- Occupational hazards and standard safety precautions necessary in electrical work
- Electrical codes and OSHA standards
- Technical schematic drawings and blueprints
- Operational software and ladder logic
- Network operating systems, administration, cabling, hubs and routers
- Object-oriented programming and database design, including Rockwell Automation Software, programming and PLC networking

This position requires the ability to:
- Operate heavy equipment including crane trucks and pickup trucks
- Operate power and hand tools.
- Deal courteously with the public and fellow employees.
- Work evenings and holidays for emergency repairs as necessary.
- Work on call rotation which includes after hour and weekend response along with daily tests at the treatment facilities
- Develop and implement a preventative maintenance plan for all electrical and electronic equipment or device found within the type of facilities listed

Education & Experience:
- Graduation from high school or equivalent
- Requires completion of an approved apprenticeship program or an equivalent combination of education, and/or training, and/or experience.
- Must possess journey level knowledge of electrical and control concepts, principles, methods, codes, electronics and pneumatics hydraulics.
- Must have experience with SCADA programming and human-machine interface software.
- Must possess or have the ability to obtain within 24 months a State of Washington Commercial Drivers License Class B with Air Brakes, Water Treatment Plant Operator 1, Water Distribution Manager 1, Group 1 Wastewater Treatment Plant Operator, L&I First Aid Card and L&I Flagging Card.

Equipment Used:
The following is a partial listing of equipment that may be used in the performance of this job:

- Digital Volt Meter, Amp Meter, desktop computer, laptop computer, crane truck, backhoe, skidsteer, vactor pump truck, lift truck, trencher, jackhammer, tamper, power pipe cutter saw, drill press, chop saw, miscellaneous hand and power tools, metal detectors, witching wands, telemetry equipment and various pumps.
- Various types of computers running Windows XP Professional operating systems.

Physical and Mental Demands of the Job:
Physical:
Constant standing, walking and/or sitting while performing heavy, manual labor tasks or operating power tools and heavy equipment, up to 10 hours per shift. Frequent lifting and carrying up to 50 lbs., up to 15 feet; frequent push/pull exerting force up to 75 lbs.; occasional climbing of ladders up to 30 feet; occasional balancing at exposed heights; constant bending/twisting at waist/knees/neck; frequent kneeling/crouching/ crawling and working in confined spaces; constant reaching/handling/fingering/grasping and using both hands/arms; subject to both intense and moderate vibrations from equipment. Ability to loosen and tighten bolts with torques in excess of 100 foot-pounds. Must be able to communicate in English, using two-way radio on occasion. Must possess sight and hearing abilities sufficient to allow for constant attention to safety in working with hazardous tools and equipment, in and around other workers and the public. Must possess good eye, hand and foot coordination in operating power equipment, tools and vehicle. Must also possess good depth perception in performing mechanical repairs.

Mental:
Constant awareness of work environment with attention to safety. Ability to work independently with standardized instructions. Ability to deal with the demands of maintaining systems that must operate 24 hours per day and 7 days per week. Ability to perform basic mathematical and electrical calculations; use tape measure and measure dimensions. Ability to read and write in English. Complete State of Washington certification tests to obtain required certifications. Constant ability to problem solve/trouble shoot and perform leadperson-type activities if assigned to a crew. Must be capable of training (on-the-job) entry level employees. Occasionally dealing with implementing new technologies that may not be fully understood. Frequently working in a capacity that requires instruction in the proper operation of systems. Frequently operating with very complex software with a limited training budget. Frequently instructing and advising plant personnel about complex computer systems. Occasionally dealing with outside contractors.