City of Bellingham
Classification Specification

CLASS TITLE	**Maintenance Instrumentation/SCADA Technician**
DEPARTMENT	**Public Works\Operations**
UNION:	**1947**
SG:	**114**
CS:	**Yes**
FLSA:	**Y**
EE04CODE:	**SC/49-9099**

NATURE OF WORK:

Maintains and enhances programmable logic controllers (PLC) and supervisory control and data acquisition (SCADA) systems; troubleshoots, updates, modifies design and drawings pertaining to PLC/SCADA system. Performs preventive and corrective maintenance on all electrical, electronic and instrumentation equipment associated with the water and wastewater systems.

DISTINGUISHING CHARACTERISTICS:

The Maintenance Instrumentation/SCADA Technician is distinguished by the requirement for the highest level of expertise in PLC and SCADA programming, electrical, electronic and instrumentation fields as applicable to equipment of the City's water and wastewater systems. This technical skill is utilized to provide oversight of the preventive and corrective maintenance for the assigned areas and to perform advanced troubleshooting and repair of the system's equipment.

The Maintenance Instrumentation/SCADA Technician is distinguished from the Maintenance Specialist classification by the Maintenance Specialist‘s greater level of expertise and the responsibility for project management, specialty projects, work planning and distribution. The Maintenance Specialist has broader knowledge of all plant electrical and electronic systems.

The Maintenance Instrumentation/SCADA Technician is distinguished from the Maintenance Technician by more specialized skills in PLC and SCADA systems.

SUPERVISORY RELATIONSHIPS:

Reports to the Maintenance Supervisor. Works independently under general supervision at plant and remote work sites. Receives work assignments, training, and guidance from Maintenance Specialists. Serves as lead worker for Utility Workers, Skilled Workers, and temporary or regular non-benefited employees, as assigned. Works under established City and Department policies and procedures, and recognized state and national standards.

ESSENTIAL FUNCTIONS:

1. Performs corrective and preventive maintenance and repair work on the SCADA and PLC systems, as well as, a variety of electric, electronic and instrumentation equipment:

electrical motors, transformers, electrical distribution systems, variable frequency drives, complex equipment control systems, and programmable logic controllers. Installs electrical appurtenances. Inspects and adjusts plant equipment as part of a comprehensive preventive maintenance program.

2. Troubleshoots PLC and SCADA systems and equipment failures; analyzes and diagnoses problems; plans corrective action to plant and system maintenance problems. Replaces or rebuilds parts and equipment as needed.

3. Manages the telemetry, PLC and SCADA systems; upgrades systems, drawings and software.

4. Plans and performs projects for equipment, instrument, and system upgrades or replacements; conducts project research, conducts planning and design, working with engineering, vendor or contractor liaison; performs fabrication, testing, and installations.

5. Maintains complete and accurate computerized maintenance management records of work performed; generates work orders and reports; maintains log; generates charts and plans.

6. Provides on-the-job training in safe and efficient maintenance techniques and specialized skills for Maintenance Technicians. Ensures work methods comply with recognized City, state, and national standards.

7. Performs preventive maintenance such as conducting inspections, cleaning, lubricating, checking tolerances, and exercising pumps, motors, compressors, instrumentation and metering equipment; also performs new installation reviews and inspections, quality control, and punch lists.

8. Contacts other departments, vendors, and outside agencies to gather information regarding equipment acquisition, and support services as necessary.

ADDITIONAL WORK PERFORMED:

1. Performs duties of Plants Skilled Worker I and Maintenance Technician classifications such as routine equipment checks or maintaining buildings and remote facilities.

2. Participates in meetings, informal training, communications, and related activities.

3. May perform some limited fabrication of parts.

4. Performs other related duties of similar nature and level.

KNOWLEDGE AND SKILLS:

- Working knowledge of the National Electric Code and its application.
- Knowledge of instrumentation theory and process control application.
- Knowledge and understanding in theory and operation of direct current (DC) and alternating current (AC) motors from fractional horsepower to 500 horsepower, current source and pulse width modulated variable frequency drives, and electrical generation.

- Ability to understand, program, and troubleshoot the logic in a variety of sizes and types of PLC and SCADA software.
- Ability to operate a variety of tools and test equipment such as volt/ohm meters, oscilloscope, meg-ohmmeter, logic probes, current and frequency generators, pulse/frequency counter, tachometers, hand and power tools.
- Ability to draw, read, understand, and translate electrical diagrams, complex circuit schematics, and complex technical manuals.
- Ability to analyze, troubleshoot and correct faults in complex electrical, electronic and instrumentation systems.
- Ability to perform basic math and algebraic calculations as related to electrical theory.
- Ability to work independently and as part of a work crew.
- Ability to follow established safety rules and regulations, and be able to independently recognize and rectify hazardous safety situations.
- Ability to learn cross connection control principles with City-provided training.
- Good skills in leadership, planning and organizing; problem analysis and decision making; time management; and, interpersonal sensitivity.
- Ability to establish and maintain effective working relationships with diverse groups of people such as coworkers, vendors, and the general public.
- Ability to evaluate technical skills of less experienced workers and to provide training and guidance for skill development.
- Ability to maintain records accurately and legibly.
- Ability and willingness to accept "on call" status for equipment failures.
- Ability and willingness to demonstrate the Public Service Competencies of Service Orientation, Results Orientation, and Teamwork and Cooperation.
- Physical ability to perform the job including:
    - Ability to continuously transport self, perform work near the ground and to ascend to, and work at, heights of up to 100 feet;
    - Ability to infrequently relocate loads of up to 50 lbs, and very infrequently relocate loads of approximately 70 lbs.;
    - Visual perception suitable for working on small parts, distinguishing between color coded electronic parts, and viewing a computer terminal;
    - Manual and finger dexterity sufficient to work with small parts;
    - Ability to communicate effectively by telephone and radio;
    - Ability to work outdoors in all types of weather;
    - Ability to work in confined spaces;
    - Ability to work with exposure to raw sewage, and in proximity to potential chemical and industrial hazards.

WORKING ENVIRONMENT:

Work may be performed indoors at a computer workstation, as well as outdoors in all types of weather conditions in an industrial plant environment at the water and wastewater plants, pump stations and other facilities of the water distribution and sewage collection system. Employees are required to use appropriate safety equipment, wear protective clothing, and follow standard safety practices.

EXPERIENCE AND TRAINING REQUIREMENTS:

- Successful completion of two years of post-secondary education (equivalent of 90 credit hours on the quarter system or 3000 clock hours from a technical college) of accredited training in electrical, electronics, instrumentation maintenance and repair, or closely related vocational areas. Structured coursework may be completed through programs at military training centers, community colleges, technical or trade schools, apprenticeships, or other City-approved institutions.
- Two years experience in a process plant environment performing preventive and corrective maintenance on SCADA, PLC, electrical, electronic and instrumentation equipment required.
- One year supervisory or lead experience in electrical, electronic or instrumentation maintenance and repair preferred.
- Experience in a maintenance function for a water distribution or wastewater collection system desirable.

NECESSARY SPECIAL REQUIREMENTS:

- Valid Washington State driver's license at time of hire and good driving record. Candidates must submit a three year driving record abstract prior to hire.
- Emergency call-out response time of 20 minutes may be required.
- Ability to work weekends, holidays, or emergency shifts.

PREPARED BY: R. Johnson
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10/09

REVIEWED BY: _____
Ted Carlson, Director
Public Works

COMMISSION ADOPTION: November 12, 2009