

INSTRUMENT TECHNICIAN

SUMMARY/PURPOSE

To maintain and repair a variety of instrumentation, SCADA, electronic processing and control equipment. The work involves installation, modification, preventative maintenance, troubleshooting, and repairs of the City Utilities' metering, transmitting and recording instruments, sensors, flow monitoring equipment and computer equipment; and performs other maintenance work as assigned.

ESSENTIAL DUTIES AND RESPONSIBILITIES (other duties may be assigned)

1. Install, maintain and repair a variety of electronic and pneumatic instruments such as telemetering devices, programmable logic controls, transmitters, receivers, sensors, monitoring equipment, flow meters, and other instruments.
2. Perform a wide variety of journey level work in the analysis, design, programming, testing, installation, integration, and maintenance of data processing systems.
3. Maintain and repair the computer equipment associated with City Utilities Supervisory Control and Data Acquisition (SCADA) monitoring and control systems, including all input and processing equipment to ensure that accurate data is received and processed.
4. Operate standard diagnostic and repair equipment and tools to properly complete the preventive maintenance or repair projects.
5. Install electrical, electronic, pneumatic and mechanical components.
6. Assist other staff and consulting specialists in the installation, modification, maintenance and repair of instrumentation and electronic processing equipment.
7. Read and interpret blueprints, drawings, manuals, and output data to diagnose and repair equipment.
8. Clean the work area after completion of a project, keeps tools and equipment in good working condition.
9. Prepare material lists and costs estimates.
10. Attend training sessions as deemed appropriate by supervisors.
11. Perform maintenance duties as assigned.
12. Act as project leader on specified job assignments and provide direction and assistance to others involved.

JOB REQUIREMENTS

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required

1. Education and Experience Requirements
 - A. A minimum of four years of full-time equivalent work experience as an instrument or computer repair technician, working with installation, maintenance and repair of electronic monitoring and processing equipment; with at least one (1) year of experience with programmable logic controls, or critical subsystems and equipment such as HMI or SCADA control systems; or
 - B. A combination of related education, above experience, and specialized training totaling five (5) years.
 - C. Experience with water, wastewater and gas controls and instrumentation preferred.
 - D. Experience with Industrial Wireless Communication Systems preferred.
2. License Requirements
 - A. Possession of a valid Minnesota Class B Commercial Driver's License or equivalent.
 - B. Possession of a Minnesota Journeyman Electrician License or equivalent.

3. Knowledge Requirements

- A. Knowledge of the various types of electrical instruments, equipment and components and the standard practices, materials and processes of the instrument and computer repair trade.
- B. Knowledge of basic PLC block diagrams and ladder logic programming.
- C. Knowledge of the NEC and NFPA guidelines.
- D. Knowledge of and ability to repair electronic circuits.
- E. Knowledge of safe working practices and ability to perform work in a safe manner.

4. Skill Requirements

- A. Skill in diagnosing, maintaining and repairing diverse electrical and electronic equipment at a component level.
- B. Skill in communicating to other to determine the nature of equipment malfunctions and assists with problem diagnosis.
- C. Skill in manipulating tools and equipment using fine hand movements.
- D. Skill in reading and interpreting blueprints and schematic drawings.
- E. Skill with Ethernet network architecture.
- F. Skill in directing the work of others.

5. Ability Requirements

- A. Ability to use hand and power tools.
- B. Ability to solder.
- C. Ability to work from drawings and specifications.
- D. Ability to read and interpret logic drawings and schematic diagrams.
- E. Ability to operate test equipment.
- F. Ability to understand and implement oral and written instructions.
- G. Ability to prioritize, schedule, and coordinate work effort.
- H. Ability to establish and maintain effective working relationships with co-workers, supervisors and the general public.
- I. Ability to effectively communicate with individuals and groups, both verbally and in writing.
- J. Ability to make repairs on electrical and electronic components.
- K. Ability to work independently without direct supervision.
- L. Ability to respond to a call outs after completion of regular assigned work hours.

6. Physical Ability Requirements

- A. Ability to work outside year round.
- B. Ability to work from ladders or scaffolds up to 50 feet high.
- C. Ability to work in confined spaces.
- D. Ability to routinely lift and carry equipment weighing up to 40 pounds, and occasionally lift and carry with assistance equipment up to 70 pounds.
- E. Ability to stand, walk, kneel, crouch and stoop, as needed to perform work activities.
- F. Ability to attend work on a regular basis.

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