

Instrument Technician

SUMMARY/PURPOSE

To maintain and repair a variety of instrumentation, Supervisory Control and Data Acquisition (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.

SUPERVISION RECEIVED

The supervisor provides continuing or individual assignments by indicating generally what is to be done, limitations, quality and quantity expected, deadlines, and priority of assignments. The supervisor provides additional, specific instructions for new, difficult, or unusual assignments, including suggested work methods or advice on source material available.

SUPERVISION GIVEN

Does not have direct supervisory responsibility but does have significant oversight of employees or projects that require delegation and direction over the work of others.

ESSENTIAL DUTIES AND RESPONSIBILITIES

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 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, and keep tools and equipment in good working condition.
9. Prepare material lists and cost 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.
13. Be an effective team member by exhibiting self-motivation, supporting other employees in handling tasks, interacting effectively and respectfully with others, showing a desire to contribute to the team effort, accepting assignments willingly, and completing tasks within agreed upon timelines.
14. Other duties may be assigned.

JOB REQUIREMENTS

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed are representative of the knowledge, skills, and abilities required.

1. Education & Experience Requirements
 - A. A minimum of two (2) 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 a combination of related education, above experience, and specialized training totaling three (3) years.
- B. Experience with water, wastewater, and gas controls and instrumentation preferred.
 - C. Experience with Industrial Wireless Communication Systems preferred.
2. License Requirements
- A. Possess and maintain a valid Minnesota D driver's license or privilege.
 - B. Registration with the State of Minnesota as an electrical worker or the ability to obtain registration within one week of hire.
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.
 - F. Knowledge of problem-solving and conflict-resolution techniques.
 - G. Knowledge of applicable safety requirements.
 - H. Knowledge of, or the ability to learn, City policies and procedures.
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.
 - G. Skill in the operation of office equipment including, but not limited to, general computer systems, job required software applications, the internet, and modern office equipment.
 - H. Skill in managing one's own time.
 - I. Skill in completing assignments accurately and with attention to detail.
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 coworkers, 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 call-outs after completion of regular assigned work hours.
 - M. Ability to create and maintain a positive working environment that welcomes diversity, ensures cooperation, and promotes respect by sharing expertise with team members, fostering safe work practices, and developing trusting work relationships.

- N. Ability to communicate and interact effectively with members of the public.
- O. Ability to communicate effectively both orally and in writing.
- P. Ability to understand and follow instructions.
- Q. Ability to problem-solve a variety of situations.
- R. Ability to set priorities and complete assignments on time.
- S. Ability to attend work as scheduled and/or required.

Physical Demands

The work requires some physical exertion such as long periods of standing; walking over rough, uneven, or rocky surfaces; recurring bending, crouching, stooping, stretching, reaching, or similar activities; recurring lifting of moderately heavy items such as record boxes. The work may require specific, but common, physical characteristics and abilities such as above.

Work Environment

The work environment involves high risks with exposure to potentially dangerous situations or unusual environmental stress requiring a range of safety and other precautions (e.g., working at great heights under extreme outdoor weather conditions).

HR: LD	Union: Basic	EEOC: Technicians	CSB: 10/03/2024	Class No: 3235
WC: 7502	Pay: 31	EEOF: Utilities/Transportation	CC:	Resolution:

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SUPERVISION GIVEN

Does not have direct supervisory responsibility but does have significant oversight of employees or projects that require delegation and direction over the work of others.

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~~ and keep tools and equipment in good working condition.
9. Prepare material lists and ~~costs~~ cost 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.
13. Be an effective team member by exhibiting self-motivation, supporting other employees in handling tasks, interacting effectively and respectfully with others, showing a desire to contribute to the team effort, accepting assignments willingly, and completing tasks within agreed upon timelines.
14. Other duties may be assigned.

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~~ skills, and/or ~~ability~~ abilities required.

1. Education ~~and~~ & Experience Requirements

- A. A minimum of ~~four~~ two (2) 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 a combination of related education, above experience, and specialized training totaling three (3) years.
 - A. ~~A combination of related education, above experience, and specialized training totaling five (5) years.~~
 - B. Experience with water, wastewater, and gas controls and instrumentation preferred.
 - C. Experience with Industrial Wireless Communication Systems preferred.
2. License Requirements
- A. ~~Possession of~~ Possess and maintain a valid Minnesota ~~Class B Commercial Driver's~~ Class B Commercial Driver's license or ~~equivalent privilege.~~ equivalent privilege.
 - A. ~~Possession of a Minnesota Journeyman Electrician License or equivalent.~~
 - B. Registration with the State of Minnesota as an electrical worker or the ability to obtain registration within one week of hire.
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.
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 - G. Knowledge of applicable safety requirements.
 - H. Knowledge of, or the ability to learn, City policies and procedures.
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- A. Skill in diagnosing, maintaining and repairing diverse electrical and electronic equipment at a component level.
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 - G. Skill in the operation of office equipment including, but not limited to, general computer systems, job required software applications, the internet, and modern office equipment.
 - H. Skill in managing one's own time.
 - I. Skill in completing assignments accurately and with attention to detail.
5. Ability Requirements
- A. Ability to use hand and power tools.
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 - 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~~ coworkers, 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.

1. ~~Physical Ability Requirements~~

- ~~A. Ability to work outside year round.~~
- M. Ability to create and maintain a positive working environment that welcomes diversity, ensures cooperation, and promotes respect by sharing expertise with team members, fostering safe work practices, and developing trusting work relationships.**
- M.N. Ability to work from ladders or scaffolds up to 50 feet high communicate and interact effectively with members of the public.**
- O. Ability to communicate effectively both orally and in writing.**
- ~~N.P. Ability to work in confined spaces understand and follow instructions.~~
- ~~B. Ability to routinely lift and carry equipment weighing up to 40 pounds, and occasionally lift and carry with assistance equipment up to 70 pounds.~~
- Q. Ability to problem-solve a variety of situations.**
- R. Ability to stand, walk, kneel, crouch set priorities and stoop, complete assignments on time.**
- S. Ability to attend work as needed to perform scheduled and/or required.**

Physical Demands

The work requires some physical exertion such as long periods of standing; walking over rough, uneven, or rocky surfaces; recurring bending, crouching, stooping, stretching, reaching, or similar activities; recurring lifting of moderately heavy items such as record boxes. The work may require specific, but common, physical characteristics and abilities such as above.

- ~~C. Ability to attend work on a regular basis.~~

Work Environment

The work environment involves high risks with exposure to potentially dangerous situations or unusual environmental stress requiring a range of safety and other precautions (e.g., working at great heights under extreme outdoor weather conditions).

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