Instrument Specialist

SUMMARY/PURPOSE

Position is responsible for the installation, repair, optimization, support and ongoing maintenance of the City gas, water and wastewater instrumentation and Supervisory Control and Data Acquisition (SCADA) system.

SUPERVISION RECEIVED

The supervisor makes assignments by defining objectives, priorities, and deadlines and assists incumbents with unusual situations which do not have clear precedents. Incumbents plan and carry out the successive steps and handle problems and deviations in the work assignment in accordance with instructions, policies, previous training, or accepted practices in the occupation.

SUPERVISION GIVEN

Does not have direct supervisory responsibility but does have significant oversight of employees and input regarding performance on a regular basis.

ESSENTIAL DUTIES AND RESPONSIBILITIES

1. Install, maintain, and repair SCADA electronic equipment necessary for the effective and safe operation of city gas, water and wastewater through analysis, design, programming, testing, and integration of systems.
2. Schedule and perform SCADA operational equipment improvements, upgrades, configuration, recovery, redundancy planning and purchases.
3. Recommend and enforce SCADA policies and procedures to ensure reliable operation, performance, and security.
4. Conduct research on emerging products, services, protocols, and standards in support of SCADA equipment procurement and development.
5. In conjunction with IT, manage SCADA end users, endpoints, networks, safeguards, permissions, storage, software, and cybersecurity.
6. Operate standard diagnostic and repair equipment and tools to properly complete the preventive maintenance or repair projects.
7. Read and interpret blueprints, drawings, manuals, and output data to diagnose and repair equipment.
8. Repair and test a variety of electrical circuits, machinery, transformers, meters, and recording instruments.
9. Install and repair electrical wiring systems and fixtures in buildings with utility instrumentation.
10. Install and connect motors, lights, controllers, voltage regulators, and racks associated with utility instrumentation.
11. Develop or participate in the development of cybersecurity standards, methods, policies techniques, procedures, and objectives as they relate to the SCADA system.
12. Understand current threats and trends in cybersecurity as they relate to SCADA
13. Conduct risk assessments to identify, mitigate and remediate potential threats and vulnerabilities to the SCADA system.
14. Stay informed about emerging technologies and best practices in Operational Technology cybersecurity.
15. Coordinate with outside contractors and determine necessary level of involvement and oversight required for repairs and projects.
16. Prepare material lists and costs estimates within assigned budget.
17. Attend appropriate training sessions.
18. 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.
19. 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 four (4) years of experience as an Instrument Technician; OR a minimum of five (5) 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.
   B. Experience with water, wastewater, and gas controls and instrumentation strongly preferred.

2. License Requirements
   A. Possess and maintain a valid Minnesota Class D driver's license or privilege.
   B. Possession of a Minnesota Journeyman Electrician License or equivalent.
   C. Completion of the Natural Gas Operator Qualifications (OQ) courses required as specified by the Chief Engineer of Utilities within six (6) months of hire and maintain certifications thereafter.

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 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 with others to determine the nature of equipment malfunctions and assist 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 in directing the work of others.
   F. Skill in the operation of office equipment including, but not limited to, general computer systems, job required software applications, the internet, and office equipment.
   G. Skill in managing one's own time.
   H. Skill in completing assignments accurately and with attention to detail.

5. Ability Requirements
   A. Ability to use hand and power tools.
   B. Ability to terminate conductors properly.
   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 in a team environment.
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, or in similar situations in which conditions cannot be controlled).

HR: LD	Union: Basic	EEOC: Technicians	CSB: 02/06/2024	Class No: 3133
WC: 7502	Pay: 36	EEOF: Utilities/Transportation	CC:	Resolution:

Instrument Specialist

SUMMARY/PURPOSE

Position is responsible for the installation, repair, optimization, support and ongoing maintenance of the City gas, water and wastewater instrumentation and Supervisory Control and Data Acquisition (SCADA) systems for all associated end users.

SUPERVISION RECEIVED

The supervisor makes assignments by defining objectives, priorities, and deadlines and assists incumbents with unusual situations which do not have clear precedents. Incumbents plan and carry out the successive steps and handle problems and deviations in the work assignment in accordance with instructions, policies, previous training, or accepted practices in the occupation.

SUPERVISION GIVEN

Does not supervise. Does not have direct supervisory responsibility but does have significant oversight of employees and input regarding performance on a regular basis.

ESSENTIAL DUTIES AND RESPONSIBILITIES

1. Install, maintain, and repair a variety ofSCADA electronic equipment necessary for the effective and safe operation of cCity gGas, water and wastewater through analysis, design, programming, testing, and integration of SCADA systems.
2. Perform SCADA file system configuration and management.
3. 2. In conjunction with IT, recommend, sSchedule, and perform SCADA SCADA operational software and hardwareequipment improvements, upgrades, patches, reconfiguration, backup, recovery, redundancy planning and purchases.
4. 3. In conjunction with IT, rRecommend and enforce SCADA policies, and procedures, and technologies to ensure SCADAreliable data and server integrityoperation, performance, and security.
5. 4. Conduct research on emerging products, services, protocols, and standards in support of SCADA systems softwareequipment procurement and development efforts.
6. 5. In conjunction with IT, manage SCADA end users, endpoints, accounts through networks, safeguards, permissions, storage, software, and overall access rightscybersecurity.
7. 6. Operate standard diagnostic and repair equipment and tools to properly complete the preventive maintenance or repair projects.
7. Read and interpret blueprints, drawings, manuals, and output data to diagnose and repair equipment.
8. Repair and test a variety of electrical circuits, machinery, transformers, meters, and recording instruments.
9. Install and repair electrical wiring systems and fixtures in buildings with utility instrumentation.
10. Install and connect motors, lights, controllers, voltage regulators, and racks associated with utility instrumentation.
11. Develops or participates in the development of information cybersecurity hardware and software standards, methods, policies techniques, procedures, and objectives as they relate to the SCADA system.
    - Develops cybersecurity policies and procedures to assure information systems reliability, accessibility, mitigate and defend against insider threats.
12. Understanding of current threats and trends in information cybersecurity as they relate to SCADA
    - Experience analyzing, designing and implementing security solutions
13. Conduct risk assessments to identify, mitigate and remediate potential security threats and vulnerabilities to the SCADA system.
14. Stay informed about emerging technologies and best practices in information Operational Technology T cybersecurity.
8. Operates and maintains systems that monitor user activity, and identify anomalous behaviors and patterns that may indicate insider threat activity

9.15. Coordinate with outside contractors and determine necessary level of involvement and oversight required for repairs and projects.
10. Coordinate with other city departments and divisions as necessary.
11. Perform offsite visits across the city based on system needs.
12.16. Prepare material lists and costs estimates within assigned budget.
13. Attend appropriate training sessions.
17.
18. 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. :
15.19. 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 four (4) years of experience as an Instrument Technician; OR a minimum of five (5) 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.
   B. Experience with water, wastewater, and gas controls and instrumentation strongly preferred.

A. A minimum of four (4) years of experience as an Instrument Technician; OR a minimum of five (5) years of; OR full-time equivalent work experience as an instrument or computer repair technician, 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.
Experience with water, wastewater and gas controls and instrumentation required.
B. A minimum of two (2) years of related education and/or of full-time, verifiable professional experience to include installation and repair of electrical wiring, systems, and fixtures in buildings as a primary responsibilityelectrical engineering, industrial control, electrical technology, or other electrical certification or trade.

2. License Requirements
   A. Possess and maintain a valid Minnesota Class D driver's license or privilege.
   B. Possession of a Minnesota Journeyman Electrician License or equivalent.
   C. Completion of the Natural Gas Operator Qualifications (OQ) courses required as specified by the Chief Engineer of Utilities within six (6) months of hire and maintain certifications thereafter.

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 network, PC, and server operating systems, including Windows Servers.
   G.F. Knowledge of problem-solving and conflict-resolution techniques.
   H.G. Knowledge of applicable safety requirements.

~~I.~~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 with others to determine the nature of equipment malfunctions and assist 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 in directing the work of others.
   F. 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.
   G. Skill in managing one's own time.
   H. Skill in completing assignments accurately and with attention to detail.

5. Ability Requirements
   A. Ability to use hand and power tools.
   B. Ability to terminate conductors properly.
   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 in a team environment.
   L. Ability to respond to ~~a~~ 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 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.~~
   ~~O.~~N. Ability to communicate and interact effectively with members of the public.
   ~~P.~~O. Ability to communicate effectively both orally and in writing.
   ~~Q.~~P. Ability to understand and follow instructions.
   ~~R.~~Q. Ability to problem-solve a variety of situations.
   ~~S.~~R. Ability to set priorities and complete assignments on time.
   ~~T.~~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, or in similar situations in which conditions cannot be controlled).

HR: LD	Union: Basic	EEOC: Technicians	CSB: ~~09/05/2023~~	Class No: 3133
WC: 7502	Pay: ~~34~~	EEOF: Utilities/Transportation	CC: ~~10/16/2023~~	Resolution: ~~23-0763R~~