

## City of Fort Worth, Texas Job Description

<b>Classification Title</b>	Senior Instrumentation/Electrical Technician		
<b>Job Code:</b>	TC5451	<b>Job Family:</b>	Technical/Para-Professional
<b>Pay Grade</b>	510	<b>Date Reviewed:</b>	06/15/15
<b>FLSA Status</b>	Nonexempt	<b>Date Revised:</b>	

### GENERAL SUMMARY

Performs specialized technically skilled work associated with maintenance and repair of water plant instrumentation and electrical system. Maintains the operational status of all electrical and instrumentation necessary to the treatment process and the control of water and wastewater facilities. Coordinates repairs to electrical and electro-mechanical equipment. Assists engineering with the design and implementation of current and future improvement projects.

### ESSENTIAL DUTIES & RESPONSIBILITIES

*The intent of this job description is to provide a representative summary of the major duties and responsibilities performed by incumbents of this job. Incumbents may be requested to perform job-related tasks other than those specifically presented in this description.*

1. Maintains and repairs electrical and instrumentation equipment utilizing TMA work maintenance management system to the standards set forth by the Texas Commission on Environmental Quality. Develops and reports equipment problems or damages to supervisors.
2. Repairs and calibrates the robotic cameras, and other electronic logging, locating, monitoring equipment, security cameras, electric motors, gas pumps, blowers, ventilators, saws, generators, hydraulic hoses, and trimmers for the water department. Assesses computer problems in the CCTV vans.
3. Retrieves log information from the hazardous gas monitors and report them to the supervisors and safety trainers in the case of an unfortunate incident or injury.
4. Manages, coordinates and provides labor for both new and rehab construction projects performed in house. Assigns work, trains, directs and evaluates work of assigned Instrumental Technicians.
5. Procures specialized equipment and supplies for repair and replacement of instruments and electrical system components. Locates contract or non-contracted vendors to purchase needed parts for repairs. Manages distribution and inventory of equipment to crews.
6. Documents instrumentation programming to include multiple digital control systems, Supervisory Control and Data Acquisition (SCADA) and local stand-alone systems. Troubleshoots and makes light modifications.

7. Gathers, compiles and analyzes data. Tracks repair costs. Coordinates activities with other departments, divisions, customer cities and other outside entities.
8. Provides financial management of departmental budget. Keeps real time log of expenses to ensure budget adherence. Locates replacement parts and weighs them against depreciated value of the equipment vs. cost to repair item. Provides expense reports to superintendents and supervisors.
9. Ensures efficiency of department equipment and maintenance schedules.
10. Performs other related duties as required.
11. Adheres to assigned work schedule as outlined in the Department and City attendance policies and procedures; ensures all behaviors comply with the City's Personnel Rules and Regulations.

### **When assigned to Water/Field Operations Divisions:**

1. Inspects, maintains and repairs sanitary sewer CCTV cameras; sanitary sewer CCTV camera transporters and related equipment associated with sanitary sewer CCTV inspection vehicles.
2. Supports and responds to CCTV inspection crew equipment failures; performs field repairs on referenced equipment.
3. Develops and implements sanitary sewer CCTV equipment maintenance schedule; performs scheduled maintenance and/or repair(s).
4. Develops and maintains sanitary sewer CCTV equipment/parts inventory.
5. Develops and maintains equipment repair logs; perform equipment performance reports.
6. Cleans tools and equipment essential to maintenance, repair and installation responsibilities.

### **KNOWLEDGE, SKILLS & ABILITIES**

- **Knowledge of:**

- Electronics, instrumentation, installation, maintenance, and repair of computer related water plant equipment.
- ARC Flash protection, LOTO, CPR/First Aid, Fire Protection, cable cleaning/splicing/terminating procedures.
- Electronic Theory.
- Micro and macro wave forms frequency isolators, waveform generators, oscilloscopes, and digital volt/ohm meters. Dual Tone signal modification and frequency shift keying.
- Computer IT and networking, assembly, and Support skills.
- Positive displacement, centrifugal pumps, and mechanical seals.
- Two stroke and four stroke internal combustion engine theory.
- Process instrumentation such as pressure, flow, level and temperature.
- Methods and techniques of calibration.

- National electrical code and electrical schematics, blueprints or drawings.
- Tools and equipment related to the installation and repair of instrumentation and high voltage electrical systems.
- Common safety precautions and practices.
- General departmental policies and regulations.
- Computer network systems.
- Contract Compliance.
- Parts Acquisition and expense.
- **Skill in:**
  - Calibration and verification through the use of portable analyzers (comparison tests) as well as utilization of lab equipment (reference samples).
  - Documentation for city and regulatory agency requirements.
  - Making observations.
  - Communicating with others.
  - Monitoring assigned activities and operations.
  - Operating assigned equipment.
  - Making sound decisions and using good judgment.
  - Prioritizing work activities.
  - Time Management and self-motivation.
  - Demonstrating intellectual capabilities.
- **Ability to:**
  - Test, diagnose, and repair complex motor controls, water process instrumentation, and electrical systems.
  - Test and verify calibration and operation through the use of digital process metering equipment, process modules, and comparison tests with certified test instruments.
  - Maintain and troubleshoot/repair and replace analytical instrumentation such as Ozone, Chlorine, Ammonia, pH, Turbidity, Suspended Solids, Sulfur Dioxide, Hydrogen Sulfide, Methane, Carbon Monoxide, Ultraviolet Transmittance, Dissolved Oxygen and ORP for process treatment and personnel safety.
  - Configure instruments to measure water flow, level, and velocity.
  - Configure, either manually or via HART communicator or software.
  - Utilize appropriate tools in performing instrumentation repair and installation.
  - Operate a hydraulic swaging tool, use a caliper, and other hand tools.
  - Read and understand blueprints and electrical wiring schematics and interpret blueprints and drawings.
  - Identify and differentiate between color-coded electrical and electronic components.
  - Maintain accurate records of all parts, labor, and maintenance schedules on nearly 1000 pieces of equipment.
  - Follow written and verbal instructions.
  - Communicate in an efficient and courteous manner with the general public and fellow employees.

## **MINIMUM JOB REQUIREMENTS**

High school diploma/GED and four years of industrial, electrical or instrumentation experience.

## **OTHER REQUIREMENTS**

Valid Texas Driver's License.

Possession of an appropriate valid journeyman license or an Associate's Degree in Instrumentation or Electrical Technology

## **WORKING CONDITIONS**

*The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.*

Depending on assignment, positions in this class typically require touching, talking, hearing, seeing, grasping, standing, stooping, kneeling, crouching, reaching, walking, repetitive motions, climbing, balancing, pushing, pulling and lifting; depending on assignment. Incumbents may be exposed to moving mechanical parts, odors, dusts, poor ventilation, chemicals, oils, extreme temperatures, inadequate lighting, intense noises, gases, vibrations, chemicals, oils and workspace restrictions.

## **PHYSICAL DEMANDS**

*The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.*

Heavy Work – Depending on assignment, positions in this class typically exerting up to 100 pounds of force occasionally, up to 50 pounds of force frequently, and/or up to 20 pounds of force constantly having to move objects.