

City of Fort Worth, Texas Job Description

Classification Title	Instrumentation Electrical Technician		
Job Code:	TC5230	Job Family:	Technical/Para-Professional
Pay Grade	508	Date Reviewed:	06/25/15
FLSA Status	Nonexempt	Date Revised:	

GENERAL SUMMARY

Performs work related to the configuration, fabrication, installation, maintenance, operation, inspection and testing of a variety of control systems equipment. Performs all aspects of high and low voltage electrical work. Maintains, installs and repairs electrical and instrumentation equipment pertinent to fiber optics and fiber optic networks, closed circuit television cameras, access control systems and water or wastewater plant activities.

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. Installs, maintains and repairs digital control systems, pneumatic control systems, programmable logic control systems and related water flow monitoring equipment; installs and maintains digital and analog computer control loops and water process instrumentation.
2. Designs, engineers, orders materials and installs complex instrumentation and electrical systems at water and wastewater plants, pump stations, lift stations and customer city metering sites.
3. Calibrates and repairs of instrumentation used for monitoring water flow treatment process.
4. Installs multiple layers of interface software with various models of instruments.
5. Installs and maintains computer control loops involving variable speed pump drives and modulating valve operations.
6. Analyzes circuitry, interprets test data developing and implements methods for improvement.
7. Discusses layout and assembly problems with service engineers.
8. Evaluates reliability and performance of installed equipment.
9. Tests electrical panels containing instruments such as meters and recorders, variable speed drive units and other highly technical equipment.

10. Establishes standard test procedures and conducts functional, operational, and environmental tests. Retrieves data from instruments using portable computers and transfer data units.
11. Establishes and follows preventative maintenance schedule for equipment in assigned area of responsibility. Inspects tools and cleans tools daily after use. Orders and maintains supplies according to established City and departmental procedures.
12. Completes all federal, state and city-required paperwork. Files and updates all operational records.
13. Acts as first responder in emergency situations.
14. Performs related duties as required.
15. 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.

Essential Electrical Functions:

1. Installs, maintains, troubleshoots and repairs complex motor control centers as needed.
2. Designs and constructs high and low voltage equipment systems for plant operations per National Electrical Code.
3. Identifies and isolates problems within the electrical distribution feeder system while maintaining the entire plant operation.
4. Maintains and troubleshoots uninterruptable power source.
5. Maintains and troubleshoots single and three-phase motors.
6. Maintains mechanical, electrical, and instrumentation of lift, pump and metering stations throughout Tarrant County.
7. Operates and maintains of high voltage cogenerated plant feeder system and associated complex motor controls, system supplement to utility power during normal operation and supply power to critical areas during total power failure.

When assigned to Water Security:

1. Troubleshoots, repairs and programs closed circuit television cameras and repairs and programs access control systems such as facility entry/exit gates, doors and card readers.
2. Works with low and high voltage equipment and program intelligent video surveillance systems.
3. Troubleshoots, programs and repairs all components of the mass notification system and repairs and maintains facility main entry mechanical gates.
4. Repairs fiber optics and fiber optic networks pertaining to the CCTV and access control systems.

5. Maintains a preventative maintenance schedule on CCTV and access control and mass notification systems.

KNOWLEDGE, SKILLS & ABILITIES

- Knowledge of:
 - Electronics, instrumentation, installation, maintenance, and repair of computer related water plant equipment.
 - Programmable logic controllers (PLC), human machine interface (HMI), instrumentation and control systems.
 - City policies and procedures.
 - Reliability-Centered Maintenance concepts.
 - Water distribution system.
 - 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.
 - Safety policies and procedures.
- Skill in:
 - Multitasking.
 - Prioritization.
 - Troubleshooting.
 - Coordination.
 - Time management.
 - Organize and schedule.
 - Operating assigned equipment.
 - Observation.
 - Decision-making.
 - Customer service.
- Ability to:
 - Communicate clearly and effectively, both orally and in writing.
 - Interpret complex electrical schematics for installation and troubleshooting.
 - Test, diagnose, and repair complex motor controls, water process instrumentation, and electrical systems.
 - Configure instruments to measure water flow, level, and velocity.
 - Utilize appropriate tools in performing instrumentation repair and installation.
 - Read and understand blueprints and electrical wiring schematics and interpret blueprints and drawings.
 - Identify and differentiate between color-coded electrical and electronic components.
 - Follow written and verbal instructions.

MINIMUM JOB REQUIREMENTS

High school diploma/GED and two years of experience in the instrumentation or electrical fields of construction, motor control maintenance, or process control instrumentation.

OTHER REQUIREMENTS

Valid Texas Driver's License.

Possession of or ability to obtain a maintenance electrician's license within three (3) years of employment, or an Associates 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.

Medium work – Depending on assignment, positions in this class typically exert up to 50 pounds of force occasionally, up to 20 pounds of force frequently, and/or up to 20 pounds of force constantly having to move objects.