

Title: Electronics/Relay Technician
PG: 54
Status: Civil Service
Position Reports to: Chief Electronics/Relay Technician
Department: Lakeland Electric

Class Code: 3035
Date: 09/08

GENERAL DESCRIPTION OF CLASS

This is highly specialized technical work involving the installation and hardware maintenance of computer based electronic systems (mainframe, server and workstation), equipment and electro-mechanical devices (remote terminal units and programmable logic) used in the control, monitoring and protection of an electric power utility. An employee in this position maintains a safe technical and functional continuity between sensitive equipment interfacing with other departments and utilities in one of the three specific areas to include Electric System Engineering/Relay, System Control/Energy Management System (EMS), or Information Services/Telecommunications/Fiber Optic. Work is performed in accordance with established policies and procedures; however the incumbent is expected to exercise independent judgment and initiative in the performance of tasks. Work will be reviewed by inspection and results obtained.

ESSENTIAL FUNCTIONS:

1. Installs, tests, calibrates and repairs all types of electronic and electro-mechanical equipment from digital computers used in real time process control applications to analog devices used in the electric power industry using standard and specialized test equipment and tools.
2. Terminates metallic and fiber optic cables in color code order. Test cables for signal quality and connectivity.
3. Uses factory manuals and schematics to repair equipment. Contact factory engineers for aid in troubleshooting complex problems and seeking solutions to continuing problems in equipment.
4. Constructs special devices such as printed circuit boards and test equipment to assist department engineers in implementing unique monitoring or control systems.
5. Maintain accurate records of all work performed, including repair and calibration records.
6. Requisitions parts and maintains spare parts inventory.
7. Supports other divisions with technical assistance and fieldwork as needed.
8. Proficient with control circuits, potential and current transformers, power transformers, substation annunciators, tone and power line carrier equipment.
9. Perform installation, commissioning, maintenance, troubleshooting, functional testing, load and/or phase angle in-service testing of all protective relays and associated equipment and control schemes.

ADDITIONAL RESPONSIBILITIES:

1. Participates in training at out-of-town locations that may require overnight stays.
2. May works in teams to accomplish inter-divisional task.
3. May be responsible for keeping vehicles and work areas clean and organized.
4. Performs related work as required.

KNOWLEDGE, SKILLS & ABILITIES:

1. Knowledge of Bridges/Switches, Routers/Hubs/Firewalls used with system LANs utilizing Ethernet, TCP/IP, FSK protocols and applications is required.
2. Knowledge in all areas of Protective Relaying, theory and application, from generation to T&D, including Distribution Automation.
3. Knowledge of advanced protective relay systems.
4. Ability to work with customers in resolving protection and control related problems including maintenance and construction activities.
5. Skill in three phase power principles as applied to protective relaying and metering.

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6. Skill in testing clearance within generator, transmission, and distribution relay testing tagouts.
7. Knowledge in the installation and maintenance of electronic telephone key systems, working with PBXs and central office telephone switching equipment, cabling data networks, and installation and maintenance of cable TV systems including both coaxial and fiber optic.
8. Knowledge of T-1, SONET, ATM, and OC-3 through OC-48 transmission.
9. Knowledge of the occupational hazards and safety precautions of the trade.
10. Skill in performing different methods of splicing and terminating fiber optic cable (fusion, hot melt, crimp, etc.).
11. Skill in testing with OTDRs, light meters, visible light sources, signal flow indicators, and the interpretation of test results
12. Skill in the use and care of electrical and electronic test equipment used in the various areas of the specialty such as oscilloscopes, digital logic analyzers, volt-ohm meters, communications line quality monitors, relay test systems, both automated and/or manual, transducer testing and calibration equipment, fiber optic testing devices, and other such equipment used in the trade.
13. Skill in using hand tools and precision soldering/unsoldering devices to make repairs to complex printed circuit boards and other electronic devices to component level.
14. Proficiency with software titles such as Procomm, Microsoft Office, Reachout, XtreeGold and others.
15. Ability to read and understand technical manuals for all types of relays and devices used in this system.
16. Ability in order to maintain proficiency on new equipment and devices as the technology evolves.
17. Ability to read and comprehend AC and DC schematics, one-line and three-line diagrams, and wiring diagrams.

WORKING ENVIRONMENT/CONDITIONS:

Requires manual labor work that involves walking or standing most of the time, exerting up to 100 pounds of force on a recurring basis, keyboard operations, manipulating tools and wires.

The job risks exposure to heights, toxic/caustic chemicals, traffic, moving machinery, extreme cold or heat, electrical shock, adverse weather conditions, bright/dim light, fumes, noxious odors, dusts, pollen, wet humid conditions, and extreme noise levels.

The job requires normal visual acuity, good manual dexterity, and field of vision, hearing, speaking, color perception, sense of smell, depth perception, and texture perception. An employee in this position must be able to discriminate between the following colors generated by red/blue/green primary colors at full or half intensity: white, green, yellow, orange, magenta, red, cyan and blue. Confirmation will be accomplished by a standard medical test for color blindness.

QUALIFICATIONS (EDUCATION, TRAINING, AND EXPERIENCE):

1. High school diploma or its equivalent with supplemental course work in the area of the specialty.
2. Three (3) years of directly related experience.
3. An equivalent combination of education and experience that is determined to be directly related to the foregoing specified requirements may be substituted.

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SPECIAL REQUIREMENTS:

1. Must possess a valid state of Florida driver's license.
2. Must maintain a valid home telephone number.
3. May be required to work overtime, or alternate hours, as necessary for the efficient operation of the department. Position may be designated as Mission Critical by Department Director.