ELECTRICIAN
WORKER
WG-2805-08

UTILITIES
ELECTRICAL

I. POSITION AND ORGANIZATION INFORMATION

Position:

Electrician Worker, WG-2805-08

Purpose of position:

The primary purpose of this job is to install, repair, and maintain various electrical systems, controls, and equipment.

Organization:

Utility Operations Branch

Organization goals:

II. MAJOR DUTIES

A. Duty (Critical):

Maintains and repairs installed electrical systems such as lighting fixtures and wiring, power fixtures and wiring, power sources, fire alarm systems, and/or services battery packs for emergency power systems. Locates broken, worn, damaged, or poorly operating wiring, fixtures, controls, and equipment through visual checks or through use of a small variety of test equipment. Makes repairs by removing, replacing, tightening, splicing, soldering, and insulating defective wiring, controls, equipment, and fixtures. Rearranges and installs items such as outlets, switches, light fixtures, regulators, and circuit breakers. (20%)

Tasks:

1. Plans tasks and determines appropriate steps and actions necessary to complete tasks.

2. Adheres to the National Electrical Code.

Selected Staffing KSAs:

A1, A2, A3, A4, A5, A6, A7

B. Duty (Critical):

Based on job layouts, work sequences, and material requirements determined by a higher grade employee, performs limited assignments in the installation or repair of complex industrial electrical systems and/or installs or repairs electrical systems incident to the construction or maintenance of family housing units, buildings, quarters, offices, or shops. (20%)

Tasks:

1. Accomplishes work in accordance with instructions provided by higher grade employee.

Selected Staffing KSAs:

A1, A2, A3, A4, A5, A6, A7

C. Duty (Critical):

Uses tools, such as screwdrivers, pliers, wire cutters, strippers, drills, soldering irons, and manual or power conduit benders and threaders. In addition, uses a limited variety of test equipment, such as meggers, test lamps, and ammeters. (20%)

Tasks:

1. Uses and accounts for all types of hand and/or power tools required to accomplish assigned duties.

Selected Staffing KSAs:

A1, A2, A3, A4, A5, A6, A7

D. Duty (Critical):

Utilizes safety practices and procedures following established safety rules and regulations and maintains a safe and clean work environment. Uses and assures proper fit of required safety equipment and clothing. (20%)

Tasks:

1. Operates equipment in a safe manner, applying established safety rules and regulations to minimize minor violations and to avoid major violations due to employee error or negligence.

2. Informs the supervisor or higher grade employee of accidents and/or damages to supplies or equipment or of any observed unsafe practices and/or procedures in accordance with established policies and procedures.

Selected Staffing KSAs:

A1, A2, A3, A4, A5, A6, A7

E. Duty (Critical):

Maintains records and documents actions. (20%)

Tasks:

1. Prepares records of actions taken and assures documentation is properly signed and coordinated in a timely manner.

Selected Staffing KSAs:

A1, A2, A3, A4, A5, A6, A7

F. Other Work Requirements

1. The employee may be recalled to duty.

III. *KNOWLEDGES, SKILLS AND ABILITIES (KSAs)*

A. Selected Staffing KSAs:

1. Knowledge of safety regulations and procedures.
2. Knowledge of electrical equipment, i.e., meggers, test lamps, voltage

5. Skill in using and maintaining hand tools such as, screwdrivers, pliers, wirecutters, strippers, cable pullers, drills, soldering irons, and manual or power conduit benders and threaders.

6. Skill in troubleshooting and tracing hard-to-locate defects or problems.
7. Ability to use electrical drawings, blueprints, engineering drawings, and wiring diagrams.

8. Ability to install, troubleshoot, repair, and maintain various electrical systems, controls, and equipment without more than normal supervision.

B. Basic Training Competencies:

1. Knowledge of safety regulations, practices, and procedures.

2. Knowledge of technical practices in order to plan, lay out, install, modify, troubleshoot, and repair a variety of complete systems.

3. Knowledge of electrical and electronic theory and instruments used in shop and trade practices.

4. Knowledge of electrical equipment, i.e., test lamps, multimeters, circuit analyzers, circuit breaker testers, voltage recording meters, meggers, watt meters, ohmeters, and ammeters.
5. Skill in using and maintaining hand tools such as, screwdrivers, pliers, wirecutters, strippers, cable pullers, drills, soldering irons, and manual or power conduit benders and threaders.

6. Skill in troubleshooting and tracing hard-to-locate defects or problems.
7. Ability to use electrical drawings, blueprints, engineering drawings, and wiring diagrams.

8. Ability to install, troubleshoot, repair, and maintain various electrical systems, controls, and equipment without more than normal supervision.

IV. CLASSIFICATION FACTORS

Factor 1. Knowledge

1. -- Knowledge of electrical principles including how various circuits, equipment, and controls fit and work together.

-- Knowledge of the various gauges, sizes, and types of wire, conduit, coupling, fittings, relays, boxes, circuit breakers, and other electrical devices, and ability to arrange and install them in ways that insure safe and proper operation of electrical systems and equipment.

-- Ability to interpret and apply blueprints, schematics, wiring diagrams, engineering drawings, technical manuals, National Electrical Code, National Fire codes, local codes, and to use trade formulas to calculate common properties.

-- Practical knowledge of electronic principles to troubleshoot electrical circuits containing electronic components.

-- Skill in installing and rearranging old or new outlets, relays, switches, and light fixtures.

-- Skill in the use of hand tools, portable power tools, and a wide variety of test equipment.

-- Ability to test completed circuits for functionality after repair or installation.

-- Skill in troubleshooting and tracing hard-to-locate defects or problems.

Factor 2. Responsibility

Works from building plans, *wiring diagrams, and engineering drawings.* Independently plans and lays out work, tracing hard-to-locate defects or problems and completing repairs and installations with little or no technical advice. Supervisor checks overall work to ensure timelines and compliance with accepted trade standards.

Factor 3. Physical Effort

Makes repairs from work stands and other hard-to-reach places. Must stand, stoop, bend, kneel, climb, stretch, and work in tiring and uncomfortable positions. Frequently lifts parts and equipment that weigh up to 20 pounds. Occasionally lifts items that weigh over 40 pounds with assistance from other workers.

Factor 4. Working Conditions

Works both inside and outside, sometimes in bad weather and in areas that are noisy, dirty, dusty, and greasy. May work on scaffolding or cranes at heights of 30 or more feet, or in close quarters such as manholes or attics. Subject to electric shock, cuts, and bruises. May be exposed to temperature extremes in test facilities, extremely high noise levels, and exposure to lead, radiation, chemicals, or carcinogens.

V. CLASSIFICATION SUMMARY

In this position:

Duty A. 25% WG-2805-10 Electrician
Installs, Repars, and Tests

Duty B. 25% WG-2805-10 Electrician
Troubleshoots Problems

~~Duty C. 25% WG-2805-10 Electrician~~
Uses Tools

Duty D. 25% WG-2805-10 Electrician
Utilizes Safety Practices

OPM Job Grading Standard for Electrician, WG-2805, TS-55 dated June 1989.

Grade: WG-10