

SUBSTATION ELECTRICAL TECHNICIAN

Mountrail-Williams Electric Cooperative

1. JOB OBJECTIVE:

The Substation Electrical Technician performs a variety of construction, maintenance, and service work on equipment throughout MWEC's service territory. This is a full-time, non-exempt, hourly paid position.

2. QUALIFICATIONS:

Applicants must be a high school graduate or equivalent. A Bachelor or Associate degree in electronics technology or comparable field is preferred, but not mandatory. Applicants should have some experience, training, or knowledge in the electrical trade or electrical utility fields.

3. ESSENTIAL DUTIES AND RESPONSIBILITIES:

- a) Adheres to safety rules and practices. Responsible for reporting un-safe practices to a supervisor.
- b) Maintains an attitude that will promote harmony and good will among fellow employees, the members, and the public.
- c) Performs construction, testing, and verification of new substations and substation additions. This includes wiring relay panels, control panels and security equipment, as necessary.
- d) Performs operation and maintenance of existing substations and substation equipment as well as the maintenance and repair of line equipment, devices, and apparatus.
- e) Installs, wires, programs, tests, calibrates, and repairs/replaces protective relays, electronic controls, and RTU's on MWEC's system.
- f) Isolates, inspects, tests, troubleshoots, and repairs/replaces substation equipment including transformers, circuit switchers, regulators, circuit breakers, reclosers, motor operators, batteries, and battery chargers.
- g) Disassembles/assembles substation equipment for testing/replacement of components when necessary.
- h) Uses ability to read and interpret manufacturing specifications to develop testing routines for MWEC substation equipment.
- i) Uses ability to operate test equipment and analyze test results to verify proper operation of protective relays and substation equipment.
- j) Participates in the development and utilization of the cooperative's Supervisory Control and Data Acquisition (SCADA) system and provides technical knowledge to assist in its maintenance and operation.
- k) Uses ability to read and interpret issued for construction physical and control prints to direct construction at MWEC substation sites, as well as verify accuracy of system design as compared to engineering drawings.

SUBSTATION ELECTRICAL TECHNICIAN

Mountrail-Williams Electric Cooperative

- l) Reads, understands, applies, and corrects schematic wiring diagrams and substation blueprints.
- m) Safely performs switching instructions to energize/de-energize equipment, isolate equipment, or re-direct power on MWEC's electrical system.
- n) Uses software to download events and load data from substation relays and recloser controls and maintains substation load and device duty cycle databases.
- o) Takes samples, tests, filters, and analyzes oil from substation equipment. Also maintains permanent and mobile oil filtering equipment.
- p) Rewires electrical equipment and AC/DC systems, as needed.
- q) Cuts, threads, bends, and installs conduit.
- r) Installs and splices fiber optic cable.
- s) Installs new wiring and cables in equipment and systems along raceways and other paths.
- t) Connects equipment and systems to power sources.
- u) Fabricates and installs brackets, hangers, and panels for equipment and systems.
- v) Maintains air conditioner/heater units, standby generators, and transfer switches.
- w) Reviews monthly substation inspections to verify proper operation, acceptable condition, accuracy of analog values, and proper settings of substation equipment.
- x) Coordinates the work of and working with contractors that may be engaged to perform some equipment maintenance or repair tasks.
- y) Works with the System Engineers, Engineering Technicians and Local Service Area Representatives to maintain balanced loading on all feeders.
- z) Keeps informed on current policies, procedures, line construction specifications, National Electric Safety Code, NERC testing requirements, and other matters related to the assigned work.
- aa) Attends and participates in on-site/off-site job training and safety meetings and attend such specialized schools as may be directed.
- bb) Keeps abreast of all changes in first aid procedures, safety rules and regulations, and always maintain an up to date First Aid and CPR cards.
- cc) Maintains a valid North Dakota driver's license with appropriate endorsements. North Dakota Class A CDL preferred.
- dd) Submits to a random drug & alcohol test per DOT regulations.
- ee) Available for after-hours emergencies or problems.
- ff) Performs any other duties assigned to fulfill the objective of the Cooperative.

4. KNOWLEDGE, SKILLS, AND ABILITIES:

- a) Proficient in the use of laptop computers using Microsoft operating systems and office software. Must have the ability to install and use technical software.

SUBSTATION ELECTRICAL TECHNICIAN

Mountrail-Williams Electric Cooperative

- b) Programs and uses test equipment through computer software as well as interfaces provided on the equipment without the use of a computer.
- c) Reads and interprets documents such as safety rules, staking sheets, operating and maintenance instructions, procedure manuals, electrical and electronic schematics and wiring diagrams.
- d) Proficient in the use of hand tools and power tools.
- e) Effectively writes routine reports and correspondence.
- f) Effectively coordinate collection of data for asset management and maintenance records.
- g) Communicates effectively with members, co-workers, and contractors.
- h) Performs power system calculations including voltage, current, impedance, power, transformation ratios and three phase voltage and current resultants. Must have the ability to perform mathematical calculations using algebra and trigonometry.
- i) Defines problems, collects data, establishes facts, and draws solid conclusions.
- j) Follows policies and procedures.
- k) Ability to safely operate equipment such as forklifts, bobcats, and payloaders.

5. BUSINESS AND RELATIONSHIPS:

- a) This position receives oral and written work assignments from the Substation Coordinator/Substation Leads and refers problems to those positions.
- b) The individual is responsible for performing all duties in a safe, efficient manner in compliance with all state and federal laws, MWEC policies, and safety regulations.
- c) This position works under the supervision and frequently receives work direction from the Substation Coordinator/Substation Leads.
- d) The individual responds to routine inquiries but refers non-routine questions to the Substation Coordinator/Substation Leads.
- e) This position has contact with staff, visitors and all MWEC personnel.

6. WORKING CONDITIONS:

- a) 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.
- b) While performing the duties of this job, the employee regularly works in precarious places and in outside weather conditions and is regularly exposed to risk of electrical shock.
- c) Regularly works off ladders and aerial lifts.

SUBSTATION ELECTRICAL TECHNICIAN

Mountrail-Williams Electric Cooperative

- d) The employee frequently works near moving mechanical parts and is occasionally exposed to vibration.
- e) The employee is occasionally exposed to an environment with fumes or airborne particles and toxic or caustic chemicals.
- f) The employee occasionally works on rugged terrain.
- g) The noise level in the work environment is usually moderate but may be loud with some frequency.

7. PHYSICAL REQUIREMENTS:

- a) 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.
- b) Thirty percent (30%) of the time is spent standing; thirty percent (30%) walking, and another forty percent (40%) sitting while driving a vehicle or sitting in the office.
- c) The employee frequently is required to stand, walk, climb, balance, stoop, kneel, crouch, crawl, reach, handle, talk and hear. The employee must frequently use hands to handle and manipulate components, equipment, tools, or controls and to operate computers and test equipment.
- d) A sense of smell is occasionally required to detect overloaded or faulted electrical and electronic components or wiring.
- e) The employee must frequently lift, push, pull or otherwise move 50-75 pounds.
- f) Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception, and the ability to adjust focus.

8. DISCLAIMER:

- a) This job description is not intended to be all-inclusive; an employee will also perform other reasonably related job responsibilities as assigned by immediate supervisor and other management as required.
- b) MWEC reserves the right to revise or change job duties as the need arises. This job description does not constitute a written or implied contract of employment. Management reserves the right to change job descriptions, job duties, or working schedules based on its duty to accommodate individuals with disabilities.

SUBSTATION ELECTRICAL TECHNICIAN

Mountrail-Williams Electric Cooperative

Approved by: Steve Peterson

Date: 2/1/2022

Reviewed/Amended by:

Date: