



SPRINGFIELD UTILITY BOARD

Job Description

TITLE: Apprentice Station Wireman
REPORTS TO: Electric Engineering Manager
and Electric Foreman

STATUS: Non-exempt / Union - IBEW
RANGE: Contract

POSITION SUMMARY: An Apprentice Station Wireman commits to a three-year apprenticeship program and will work under the supervision of an Electric Foreman or Journeyman Station Wireman at all times. All apprentices will be required to register under the Oregon State Apprenticeship and Training Council and participate in related on-the-job or outside training programs that are made available through this agency. The apprenticeship program shall comply with the Joint Apprenticeship Training Committee (JATC) program requirements for the Eugene/Springfield area. Performs other duties as assigned.

MAJOR RESONSIBILITIES

1. Supports and models behavior to promote the Mission and Core Values of SUB to staff and customers.
2. Develops and maintains professionalism and effective teamwork in the performance of job duties.
3. Maintains reliable and predictable attendance.
4. Acquires knowledge of and complies with work rules and safety practices, including the required use of PPE.
5. Learns, develops and exercises good judgment and skills to respond to unusual and hazardous circumstances, especially in emergency situations.
6. Actively participates in team, safety and tailboard meetings.
7. Maintains a current Oregon driver's license and a good driving and safety record.
8. Attends and participates in on-the-job and/or outside training programs to install, maintain, test, troubleshoot and repair:
 - a. Power transformers
 - b. Load tap changers and voltage regulators
 - c. Transmission and distribution circuit breakers
 - d. Line sectionalizers and reclosers
 - e. Potential and current transformers
 - f. Electromechanical and microprocessor-based/digital protective relays, including 21, 50, 51, 59, 63, 67, 69, 79, 81, and 87 devices
 - g. SCADA equipment and communications
 - h. Station metering

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- i. Control panels and associated wiring
 - j. High voltage switches and disconnects
 - k. Station DC supply (battery and charger)
 - l. Station structures (steel, aluminum bus, insulators, etc.)
 - m. Station ground mat and equipment ground connections
 - n. Distribution transformers (not installation)
9. Attends and participates in on-the-job training programs to comprehend and interpret engineering produced drawings and wiring diagrams as well as generate as-built prints.
10. Attends and participates in on-the-job and/or outside training programs to develop and demonstrate knowledge and skill to perform following:
- A. Test distribution transformers
 1. TTR (Polarity)
 2. Megger
 - B. Test transmission (substation class) transformers
 1. TTR
 2. Megger (10 kV)
 3. Power factor
 4. Tap changer
 5. Wire schematic (control wiring)
 6. Overhaul tap changer
 - C. Test circuit breakers and reclosers
 1. Hi-pot
 2. SF6 alarm and lockout functions
 3. Micro-ohm
 4. Low voltage trip
 5. Motion analysis tester
 6. Megger
 7. Control wiring schematic
 8. Overhaul
 9. Trip test
 10. Current transformers
 11. Power factor (as needed)
 - D. Test regulators and load tap changers
 1. TTR
 2. Control wiring
 3. Megger
 4. Compensation setting
 5. Winding resistance
 6. Power factor

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- E. Oil and sampling
 - 1. Acidity
 - 2. Color
 - 3. Di-electric
 - 4. Specific gravity
 - 5. Interfacial tension

 - F. Test protective relays (electromechanical and microprocessor-based/digital), meters, reclosing control devices and SCADA devices
 - 1. Cognitive appraisal of wiring schematics
 - 2. Install, set, and, validate the performance of relays, including, but not limited to: 21, 50, 51, 59, 63, 67, 69, 79, 81, and 87 devices.
 - 3. Relay testing will be performed utilizing an advanced, computer-based, protective relay test set(s), which simulates power system conditions.

 - G. Dispatch & Switching
 - 1. Produces orders for substation, transmission and distribution facilities:
 - a. Switching
 - b. Hold
 - c. Clearances
 - 2. Performs in both routine and emergency conditions
 - 3. System mapping
 - a. Line, bank, circuit breaker capacities
 - b. Voltage I.D.
 - c. System configuration – wye, delta and how they might impact the system
 - 4. Monitor electric system through SCADA during switching
 - 5. Equipment – regulator switching
 - 6. Station switching
 - 7. Switching with external utilities (BPA, EWEB)

 - H. Operation of equipment
 - 1. Oil filter
 - 2. Oil testing and sampling equipment – dielectric, acidity, color, interfacial, tension, specific gravity
 - 3. Hi-pot
 - 4. Relay test sets
 - 5. Motion analysis tester
 - 6. Micro ohm
 - 7. Meggers (10 kV - .5kV)
 - 8. TTR
 - 9. Winding resistance
 - 10. Power factor test set
 - 11. Pipe bender – threader
 - 12. Hand tools
 - 13. Current transformer test set
 - 14. SF6 gas cart (gas handling, filling, evacuation, vacuum pump)
12. Attends and participates in on-the-job and/or outside training programs to develop and demonstrate working knowledge of working rules, NESC regulations and SUB policies.

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13. Assists Journeyman Station Wireman as assigned.

Marginal Functions

14. Participates in on-the-job training program to perform the evaluation and testing of Personal Protective Equipment (PPE).

15. Supports installation and maintenance of SUB's fiber optic system.

Given the dynamic and challenging environment of the utility industry and our mission to provide exceptional service to our internal and external customers, additional duties and responsibilities, other than those listed in this job description, may be assigned (contingent on labor agreement provisions, if applicable). Your supervisor will communicate these changes either formally or informally, verbally or in writing.

Attributes

SUB strives to promote a safe, positive and caring work environment. In addition to the above responsibilities, the following attributes are essential to be a successful employee at SUB:

- Being committed to SUB's Mission and Core Values
- Complying with safety practices and policies
- Being professional, honest, courteous and respectful to others in your conduct
- Being responsive to suggestions to improve performance
- Being flexible to adapt to a changing work environment
- Performing as a productive team member
- Being accountable for your own performance, behaviors and contributions
- Taking the initiative to accomplish your responsibilities to the best of your ability

These qualities in our employees ensure that working at SUB is motivating, fun and enjoyable while performing a valuable service to our utility and community.

OTHERS SUPERVISED

- None

MINIMUM QUALIFICATIONS

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Experience

- Recent experience in the electrical field using computer interface for control of electric apparatus (i.e. PLC, SCADA, etc.) or experience using computers for digital simulations (i.e. MATLAB, PSpice, etc.);
- Prior experience installing, configuring, maintaining, repairing mechanical equipment preferred.
- Related experience with electric utility or similar utility preferred.

Knowledge, Skills & Abilities

- Proficient in the proper use, safety and care of tools and equipment
- Basic knowledge of Microsoft Windows, Word and Excel software programs
- Ability to learn the methods, procedures, hazards and safety precautions for working in an energized area
- Demonstrated knowledge in trigonometry
- Proficient interpersonal skills to communicate orally and in writing with staff, supervisors and customers on a daily basis
- Basic problem solving skills within scope of assigned tasks
- Ability to perform work independently
- Ability through on-the-job and/or outside training programs to gain a journeyman level knowledge and skills of the following areas:
 - Control wiring
 - Power circuit breakers
 - Transformers
 - Regulators
 - Load tap changers
 - Substation protection relays
 - SCADA control and operation hardware
 - Switching orders and dispatching

Education

- High school diploma or equivalent
- Completion of an electric-based apprenticeship program (includes, but not limited to, electrician, wireman, lineman, meterman) or completion of an Associate's degree in electric or electronic technology

PHYSICAL AND MENTAL REQUIREMENTS

- **ALERTNESS & CONCENTRATION:** Maintains full alertness and concentration at all times while working in proximity of energized conductors and equipment, even in inclement climatic conditions, at night and at the end of a 36-hour emergency shift (with no sleep and breaks only for meals).
- **ABILITY TO DEAL WITH STRESS:** Makes decisions quickly and calmly during emergency conditions. Thinks and reacts quickly if accidents occur, especially those involving energized

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conductors and/or substation outages. Interacts well with co-workers, especially when working in stressful situations.

- **VISION:**

Far Visual Acuity: Assesses status of fixtures (i.e. wires, and devices) in substations. Sees adequately to operate utility vehicles.

Near Visual Acuity: Reads small print stamped on metal plates on transformers, other equipment name plate data and construction drawings.

Peripheral Vision: Maintains full field of vision in all directions to assess proximity to energized wires to workers and other equipment near energized wires.

Color Vision: Judges red, green and yellow traffic lights adequately to operate utility vehicles on highways. Differentiates red and green control lights on switching equipment and color of underground utility locate paint.

Depth Perception: Ensures that he/she or co-workers are not working too close to energized wires.

Night Vision: Maintains the visual abilities listed above when working at night and in poor light and inclement weather conditions.

- **HEARING:** Hears the spoken conversation well while working on the ground and with a co-worker who is above ground or on a structure despite heavy background noise from traffic, construction equipment, rain or wind and when visual signals cannot be used. Hears accurately the high-pitched "fuzzing" noise (about 6,000 Hertz) which occurs when making certain types of connections on energized conductors. Hears adequately to operate a two-way radio and telephone.
- **SPEECH:** Speaks loudly and clearly enough to be accurately understood when talking to a co-worker who is above ground or on a structure despite heavy background noise from traffic, construction equipment, rain or wind and when visual signals cannot be used. Speaks clearly, communicating by two-way radio and telephone.
- **STANDING:** Stands on dirt, concrete, asphalt or solid floors for 20% of the work day.
- **SITTING:** Sits on a bench-style pickup seat one-half hour maximum at one time while driving to and from job sites. Also, sits in a desk chair at a relay test bench or desk, total sitting is one to two hours per shift.
- **WORKER MOBILITY:** Can change positions frequently.
- **WALKING:** Rarely walks one to two miles at a time on uneven ground. More common maximum distance walked is 1/4 to 1/2 mile. Total walking per shift is 30% - 50%.
- **LIFTING/CARRYING:** 0-10 lbs. - Continuous; 11-20 lbs - Continuous; 21-50 lbs. – often; carries boxes of substation materials or equipment.
- **PUSHING/PULLING:** The installation of electrical or communication cables with weights between 0.5 and 1 lbs per foot which is pushed through a 2 or 3-inch conduit, often while bent over in a vault for up to 15 minutes at a time.

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- **TWISTING:** Rotates head fully to both sides to observe equipment and co-workers while standing on the ground. Some twisting is required when lifting items to coworkers.
- **CLIMBING:** Climbs hills and walks over uneven ground while carrying equipment.
- **CRAWLING:** Not usually required.
- **ENVIRONMENTAL FACTORS:** Performs a variety of strenuous tasks outside with temperatures varying from below zero to over 100 degrees; including sometimes in rainy, windy, snowy or icy conditions. Exposed to noise from traffic construction equipment near construction sites, jack hammers, and tamps, up to two hours per day. Hearing protection is provided. Exposures may include mineral spirits or denatured alcohol. The solvents are placed on a rag and utilized to wipe or clean current carrying contacts. Some mineral oils are used in transformers or other damaged equipment. Exposed to numerous types of pollen, depending on location, season or climatic conditions. Bee/wasp stings, animal bites or poison oak may also occur.
- **PRODUCTS AND MATERIALS:** Lumber, steel, wire, bolts, mineral spirits or denatured alcohol and transformer oil.
- **MACHINES/TOOLS/EQUIPMENT:** Power tools, hand tools, electrical test equipment, computers and vehicle equipment.

Revised: September 10, 2018