



## SPRINGFIELD UTILITY BOARD

### Job Description

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**TITLE:** Journeyman Station Wireman  
**REPORTS TO:** Electric Engineering Manager  
and Electric Foreman

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

**POSITION SUMMARY:** A Journeyman Station Wireman installs, tests, maintains, troubleshoots and repairs substation apparatus, including: power transformers, load tapchangers, voltage regulators, transmission and distribution circuit breakers, line sectionalizers, reclosers and their attendant controls, electromechanical and microprocessor based relay protection schemes and SCADA devices. Installs and maintains switchyard steel, insulators, bus and disconnect switch assemblies. Produces switching orders, clearances and assists in outage restoration. Performs other duties as assigned.

#### **MAJOR RESPONSIBILITIES**

##### *Essential Functions*

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. Demonstrates knowledge of and complies with work rules and safety practices, including the required use of PPE.
5. Exercises and demonstrates 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 training to keep current and gain knowledge with changing substation technologies. These can be in-house and/or outside training opportunities.
9. Installs, maintains, tests, troubleshoots and repairs:
  - a. Power transformers
  - b. Load tapchangers 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

## Page 2 – Journeyman Station Wireman

- g. SCADA equipment and communications
  - h. Station metering
  - 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)
10. Comprehends and interprets engineering produced drawings and wiring diagrams as well as generates as-built prints.
11. Demonstrates knowledge and skills 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
  - E. Oil and sampling
    - 1. Acidity

### Page 3 – Journeyman Station Wireman

2. Color
  3. Di-electric
  4. Specific gravity
  5. Interfacial tension
  6. PCB
- 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. Generator – 30 kw – 2.5 kw
  2. Oil filter
  3. Oil testing and sampling equipment – dielectric, acidity, color, interfacial, tension, specific gravity
  4. Hi-pot
  5. Relay test sets
  6. Motion analysis tester
  7. Micro ohm
  8. Meggers (10 kV - .5kV)
  9. TTR
  10. Winding resistance
  11. Power factor test set
  12. Pipe bender – threader
  13. Hand tools
  14. Current transformer test set
  15. SF6 gas cart (gas handling, filling, evacuation, vacuum pump)
12. Demonstrates working knowledge of working rules, NESC regulations and SUB policies.

## Page 4 – Journeyman Station Wireman

13. Performs duties of station safety watcher for Crew and third party contractors as needed.

### ***Marginal Functions***

14. 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**

#### ***Experience***

- Qualified Journeyman Substation Wireman required, with five (5) years of experience preferred.
- Experience testing protective relays is preferred.
- Experience with switch order writing is preferred.

#### ***Knowledge, Skills & Abilities***

- Proficient in the proper use and responsible care of tools and equipment

## Page 5 – Journeyman Station Wireman

- Demonstrated knowledge of control wiring for power circuit breakers, transformers, regulators, load tap changers, substation relays (both electromechanical and microprocessor based) and SCADA devices
- Basic proficiency in Microsoft Word, Excel and Windows software

### *Education*

- High school diploma or equivalent
- Must have successfully completed a State or recognized apprenticeship program for a Journeyman Station Wireman

### **PHYSICAL AND MENTAL REQUIREMENTS**

- **ALERTNESS & CONCENTRATION:** Maintains full alertness and concentration at all times while working on substation 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 break 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 conductors and/or substation outages. Interacts well with co-workers in stressful situations, especially when working with a Journeyman Lineman or other Journeyman Station Wiremen.
- **VISION:**
  - Far Visual Acuity:** Assesses status of fixtures (i.e. wires, and devices) in substations. Sees adequately to drive pickup truck.
  - 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 drive line trucks 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 condition.
- **HEARING:** Hears the spoken conversation well while working on the ground and a co-worker is working on top of a substation 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 on top of a substation structure despite heavy background noise from

## Page 6 – Journeyman Station Wireman

traffic, construction equipment, rain or wind, and when visual signals cannot be used. Speaks clearly, communicating by two-way radio and telephone.

- **STANDING:** The worker stands on dirt, concrete, asphalt or solid floors for 20% of the work day.
- **SITTING:** Worker sits on a bench-style pickup seat one-half hour maximum at one time while driving to and from a job sites. 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 worker carries boxes of substation materials or equipment.
- **PUSHING/PULLING:** The 1 to 2-inch diameter electrical or communications cable which weighs between 0.5 and 1 lb. per foot is pushed through a 2 or 3-inch conduit, often while bent over in a ditch for up to 15 minutes at a time.
- **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, 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. 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. Exposures may include creosote, pentachlorophenol or keminite. Exposed to 1,1,1,-trichloroethane and perchlorathylene, used to clean cables before splicing when installing underground wires. Some mineral oils are used in transformers or other equipment.
- **MACHINES/TOOLS/EQUIPMENT:** Power tools, hand tools, electrical test equipment, trucks and computers.