

**BONNEVILLE POWER ADMINISTRATION
JOB STANDARD FOR
SUBSTATION OPERATOR APPRENTICE BB 5407 51**

I. JOB CHARACTERISTICS

A. GENERAL

The Substation Operator Apprentice works under the direct supervision of a Chief Substation Operator. Work and field training assignments will be directed and authorized by the Chief Substation Operator. The Substation Operator Apprentice Instructor will be in charge of the Apprentice during class room training sessions.

The Apprentice performs a variety of tasks designed to provide experience which will enhance technical understanding and skill in the use of the tools and equipment of the trade. Work and field training assignments are performed in a high-voltage electrical power transmission system under the supervision of a journeyman Substation Operator; and, in accordance with established power system operating procedures, government regulations, Bonneville Power Administration (BPA) Safety Rules, and the BPA-Columbia Power Trades Council (CPTC) Agreement.

The Substation Operator Apprenticeship program is a formal 3 ½-year program consisting of seven steps (training periods). The apprentice must pass an oral review at the end of each step to remain in this program. Apprentices will be promoted to journeyman after successfully passing the seventh step review. He/she will then be assigned to a vacant journeyman position as they occur, in accordance with personnel placement procedures in effect at that time.

In addition to satisfactorily completing the on-the-job training portion of the program, the apprentice will complete assigned lessons associated with periodic classroom instruction sessions and correspondence lessons in electrical trade theory during each step of the apprenticeship program.

To successfully complete this program an apprentice will need to commit approximately 15 hours study each week on average to correspondence lessons, classroom instruction lessons, organizing information acquired during regular work hours, preparing for classroom training and preparing for end-of-step reviews.

Failure to complete the required correspondence course and all classroom instruction sessions satisfactorily can be sufficient cause for removal from the program.

B. TASKS

The Substation Operator Apprentice, under direct supervision of a journeyman Substation Operator or another journeyman Electrical Worker, operates high voltage electrical equipment in electrical power transmission system substations and on transmission lines. Specific tasks vary with the type of substation to be operated.

The Apprentice is expected to gain knowledge of the various work processes, high voltage power system equipment, associated protective relays, and become proficient in the use of proper terminology. All these tasks will be progressively more difficult throughout the apprenticeship.

In addition to learning the work processes in each step as indicated above, throughout the apprenticeship the apprentice will perform switching under the supervision and guidance of a journeyman Substation Operator. Additionally they will, read meters, complete periodic reports, perform equipment and substation inspections, and perform janitorial duties and grounds maintenance work.

There will be assignments with various other BPA functions to learn their working processes. The assignments will be of short-term and will occur throughout the apprenticeship.

System Dispatching and SCADA	Power Scheduling Group
Substation Electrical Maintenance	Power Generating Facility
Transmission Line Maintenance	Test and Energization/Construction
System Protection and Control Maintenance	Power System Control Maintenance

C. WORKING CONDITIONS

Work is performed both indoors and outdoors under all prevailing weather conditions during the day or night. Work is also performed on uneven, outdoor surfaces, including steep inclines, on rocked or graveled surfaces and unimproved surfaces. Hazards include working around high voltage equipment and machinery with moving parts. The possibility of explosion or fire is ever-present. The Substation Operator Apprentice may work from ladders, platforms, scaffolding, or stairs. Work may be at heights up to 60 feet. The work environment will occasionally include high noise levels and/or exposure to hazardous substances (such as acids, PCB's, pesticides, asbestos, mercury, solvents, etc.) that could, if precautions are not followed, pose a health risk. Proper respiratory and safety equipment shall be worn when hazardous substances are being handled. Emergencies, critical system conditions, or outage limitations may require that work be done at night and/or under time restraints. System priorities may require extended periods of overtime, including working weekends.

The Apprentice can expect to be in a travel status approximately 25% of the time, since assignments away from the headquarters will be required to complete some of the work processes and training. The total costs of tuition, books, and related materials will be paid by BPA. The Apprentice will be paid for travel and per diem expenses, in accordance with applicable travel regulations, for expenses incurred in connection with mandatory training, including training on scheduled days off. The time spent traveling to the training site and returning from the training site is the employee's responsibility and is not paid for by BPA.

D. SPECIAL CONDITIONS OF EMPLOYMENT

Persons filling Substation Operator Apprentice positions are required to meet some or all of the following conditions:

1. Satisfactory completion of all aspects of each step including the correspondence course and classroom instruction is mandatory for advancement to the next step. Failure to demonstrate satisfactory progress will result in removal from the apprenticeship program.
2. Work in close proximity to substances, such as acids, polychlorinated biphenyls (PCBs), pesticides, asbestos, mercury, and solvents, etc., which may have effects on health unless prescribed handling procedures are followed. If exposed to health hazards, have periodic physical examinations as prescribed by competent medical authority at BPA expense.
3. Become knowledgeable with and follow the safety practices of the BPA Accident Prevention Manual.
4. Establish a residence in accordance with negotiated requirements, that is within one hour or less commuting time under normal weather and road conditions to the duty station headquarters.
5. Possess within the first two weeks of the apprenticeship program, and maintain thereafter for the duration of the Apprenticeship Program, a Restricted Electrical Worker Permit.
6. Possess at all time a valid state driver's license. Traffic citations indicating poor driving habits may disqualify applicants, and can be cause for removal from the program.
7. Obtain certification on the equipment associated with substation operations assigned to operate.
8. Take First Aid training to obtain a First Aid and CPR Card within the first month of employment and maintain continuously thereafter.
9. Subject to call for emergency work at any time.
10. Operate any type of motor vehicle applicable to assigned duties.
11. As part of the job requirements, and at the discretion of the Chief Substation Operator III, the Substation Operator Apprentice shall be required to apply restricted use pesticides and may be required to obtain a pesticide applicator's license. The Administration shall provide the necessary training for such a license.
12. In addition to a successful evaluation on the final review, the Step 7 Apprentice must pass the current year's Standard Clearance Certification examination. Satisfactory completion of the clearance certification examination is a mandatory requirement for graduation to the journeyman level.
13. The Apprentices may be selected for and relocated to their first assigned duty station in Step 6 or 7, and graduate to journeyman at that location. Per Negotiated MOU.

E. RESPONSIBILITIES

The work is performed under the direct supervision of a journeyman Substation Operator or another journeyman Electrical Worker, who outlines the assignments and objectives, and discusses the work. The work of the Apprentice is closely reviewed for conformance to instructions, accuracy, completeness, and appropriateness of any actions taken. The Apprentice works independently on all aspects of the work for which fully trained. The Apprentice is responsible for good work practices, learning the step and related training material, and for completion of tasks in a manner which will insure personal safety, the safety of others, minimize equipment damage or failure, and interruption of service. The Apprentice is accountable for government owned and/or assigned personal property. He/She are also responsible for the proper care of tools, vehicles, and other work equipment that they use. The Apprentice must comply with all relevant aspects of management directed activities, such as programs for the handling and disposal of hazardous waste material.

F. WORKING RELATIONSHIPS

The Apprentice has contacts with various BPA operations, maintenance, engineering, and construction personnel, as well as personnel of Federal generating plants. The Apprentice also has working relationships with utility and customer operations and maintenance employees, telephone company service personnel, contractors, public officials, and the general public. Conduct in these relationships is expected to be exemplary.

G. WORK PROCESSES AND APPROXIMATE HOURS

The Apprentice shall perform various substation operations tasks under the direction of a Journeyman Operator.

<u>Work Process</u>	<u>Goal Hours</u>
Safety and First Aid	210
Switching	1070
Loop switching and line sectionalizing	210
Inspections	750
High Voltage Equipment	490
Low Voltage Equipment	310
Protective Relays	580
Instrumentation	210
Environmental	150
Trade Theory	1200
Operations Training Center	280
Other Craft Assignments	380
Customer/Client Relations	140
Substation Upkeep	100
Miscellaneous	80
Total Hours:	<u>6160</u>

II. MINIMUM QUALIFICATION STANDARDS/EVALUATION FACTORS

A. KNOWLEDGE, SKILLS, AND ABILITIES

To determine those who are minimally qualified and those who are best qualified, candidates will be evaluated on the basis of results of a written test, experience, education, training, supervisory appraisal, and/or potential regarding the following job elements:

1. Aptitude and interest to learn trade theory (Failure to meet this requirement will result in an ineligible rating)
2. Ability to follow directions
3. Reliability and dependability (Failure to meet this requirement will result in an ineligible rating)
4. Dexterity and safety
5. Ability to use prints and drawings

B. PHYSICAL REQUIREMENTS

Incumbents must be physically and mentally able to efficiently perform the duties of the position, with or without reasonable accommodation, without hazard to themselves or others. They must be in good physical condition sufficient to safely perform the duties of the position.

1. Operator duties may be required to be performed on rotating shifts, at night, and on weekends.
2. Must be physically able to move rapidly to and from the control house to various locations in the switchyard (distances of as much as one-quarter mile) several times in succession during the execution of switching operations. Some switching operations will involve extended continuous periods (8 hours or more) of physical activity due to power system contingencies and operations, including exerting effort to manually operate disconnect and ground switches. Operating mechanisms (swing handle or hand crank) of disconnect and ground switches require up to 50 pounds of pulling or pushing exertion from a standing position.
3. Must be able to work on uneven, inclined, improved, and unimproved ground surfaces in all weather conditions. Traveling on foot across all terrain during inclement weather over distances of one-quarter mile or more to gain access to remote switching locations. Additionally may be required to travel under these conditions and distances while assisting other crafts and during certain power system emergencies.

4. Must be able to climb and work from ladders, platforms, scaffolding, or stairs. Must be able to work at heights of up to 60 feet. Must be able to move and position loads weighing up to 120 pounds such as manhole covers and nitrogen gas cylinders. Must be able to lift and carry up to 50 pounds such as bags of herbicides and fertilizers. Considerable physical exertion is also required while performing activities such as building and grounds maintenance.
5. Extensive driving of sedans, pickup trucks and vans, both day and night, during all weather conditions, and over unimproved surfaces may be required.
6. Must be able to grip, hold, and handle a hot stick tool of lengths of up to 20 feet weighing approximately 10 to 12 pounds. Must be able to physically manipulate these hot sticks to lift weights from the end of these hot sticks of up to 30 pounds from ground level to a near vertical position in order to change fuses. Additionally, hot stick tools are used to operate hot stick bus links, hook operated disconnect switches, and install and remove portable protective grounds. Incumbents must be able to work with both arms overhead.
7. Must be able to work alone and/or remote from others under stressful situations requiring exacting procedures and the pressure of emergencies.
8. Must be able to wear a respirator periodically.
9. Must have good distance vision and have the ability to read printed material the size of type written characters. Must be able to distinguish the basic colors, of red, orange, yellow, brown, blue, green, and purple in order to distinguish color coded computer screen images.
10. Must be able to hear the conversational voice.
11. Speech must be suitable for clear communication by telephone.

III. CAREER PATHS AVAILABLE

A. REGIONAL OPERATIONS

Substation Operator or D. C. Substation Operator
Senior D. C. Substation Operator
Chief Substation Operator

B. SYSTEM OPERATIONS

Assistant Dispatcher (Dispatcher in training)
System Dispatcher
Generation Dispatcher
Senior System Dispatcher

IV. COMPETITIVE LEVELS FOR REDUCTION IN FORCE

Substation Operator Apprentice