BONNEVILLE
POWER ADMINISTRATION

RULES OF CONDUCT HANDBOOK

Policies and Procedures for Permits,
Energized Access,
and Clearance Certifications

November 2019

SUBSTATION OPERATIONS
MAKING THE CONNECTIONS
CUSTOMERS-ENVIRONMENT-DISPATCH-OUTAGE-DESIGN-CONSTRUCTION-MAINTENANCE-EQUIPMENT-SAFETY

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1. PURPOSE

The Rules of Conduct Handbook defines policies and procedures governing access and movement within BPA energized facilities, requirements for obtaining and renewing access and the associated worker Permits, and the obtaining of Clearance Certifications.

2. POLICY

No person shall enter a Bonneville Power Administration (BPA) energized facility unless they have a Permit issued in accordance with the Permit procedure, or are escorted by a person having a Permit, or are a qualified worker of a utility having authorization by BPA to enter unescorted.

BPA will provide all necessary training to qualify BPA employees and Supplemental Labor applicants at no cost to the employee or contract companies.

3. DEFINITIONS

Alarm Monitoring Station (AMS)	Monitors all security alarm and video feeds at NERC CIP sites. AMS phone number is 360-418-2470.
CFTE	Contractors managed through the Supplemental Labor Management Office (SLMO).
Clearance Certification	An exam, when passed by an employee holding an Electrical Worker Permit, allows that person to hold Clearances and Hold Orders on BPA normally energized equipment to perform work.
Contracting Officer's Representative (COR)	Responsible for submitting required documentation to TOZ on behalf of the Non-Supplemental Labor contractor

Energized Access	Permission to enter energized facilities unescorted granted to persons qualified through the permitting process. Entry into energized facilities is considered restricted access. Only the Substation Operations Group (TOZ) can grant energized access.
Energized Facilities	BPA substations, including substation control houses, all buildings included as part of the substation perimeter or contained within the substation and the high voltage switchyard having energized equipment connected to the high voltage power system.
Energized Facilities Key	A hard key that provides access to Non-NERC CIP areas. This key may only be used by permitted individuals.
Escort	A permitted person providing escorted access and movement for a non-permitted person(s) within a BPA energized facility whose Permit is appropriate to the level of work or supervision of work to be performed by the non-permitted person(s).
ID Badge/Proximity Card	• DOE/BPA (photo) identification badge issued for the purpose of accessing BPA facilities. • Proximity card issued by BPA for the purpose of electronic access into facilities with card readers. Note: For Non-CFTE contractors the ID badge and proximity card are one.
Minimum Approach Distance (MAD)	Minimum distance required between energized conductors or equipment and workers, that must be maintained as identified in the Accident Prevention Manual (APM) and the Contractor Safety and Health Requirements.
NERC	North American Electric Reliability Corporation.
NERC CIP	North American Electric Reliability Corporation Critical Infrastructure Protection.

NERC CIP Site	A building which contains Critical Cyber Assets as defined by NERC. At NERC CIP substations these are the control house and relay house(s). The substation switchyard is not a NERC CIP Site.
NERC CIP Field Training	Annual security awareness training required for unescorted access into energized facilities.
Non-CFTE	A Non-Supplemental Labor contractor working under a contract which requires adherence to the Contractor Safety and Health Requirements for Prime and Subcontractors.
Normally Energized	High voltage power system equipment is considered “normally energized” if it is energized or could be energized by closing an isolating device.
Permit For Energized Access (Permit)	A level of permission granted to qualified persons to enter energized facilities unescorted for the purpose of observation or performance of work.
Permit Cycle	The length of time a Permit is valid as defined in the Rules Of Conduct Handbook, Section 4.5.
Physical Security Perimeter (PSP)	The physical border surrounding locations, in which BES Cyber Assets, BES Cyber Systems, or Electronic Access Control or Monitoring Systems reside, contained within a NERC CIP Site and for which access is controlled.
Proctor	A person authorized by a test administrator to assist in the administration of an exam to ensure the integrity of the test environment.
Qualified Employee Qualified Person	Any person trained and familiar with the work practices, procedures, and safety requirements that pertain to their job assignment and deemed qualified by the employer to perform the task. (This is not interchange-able with OSHA defined terms)

Substation Electrical Hazard Awareness Tour (SEHAT or Substation Tour)	A guided tour of an energized substation conducted by a Chief Substation Operator or their designee. Substation tours are required for the completion of the permitting process.
Test Administrator	A person authorized by the Manager of the Substation Operations Group Manager to administer an exam.

4. GENERAL PERMIT INFORMATION

Permits are required for unescorted access to BPA energized facilities for work or observation. Permits will only be issued to those persons who have a need to enter energized facilities as determined by the person's manager (Approving Official) or by contractual requirements. A person applying for a Permit must meet the minimum qualifications as defined in this document and pass the applicable written exam.

There are four Permit levels:

- Access Permit
- Non-Electrical Worker Permit (NEWP)
- Restricted Electrical Worker Permit (REWP)
- Electrical Worker Permit (EWP)

For detailed Permit requirements, refer to Section 5.

4.1 Obtaining a New Permit

To obtain a new Permit, the applicant must meet the minimum requirements and complete all items listed in Section 5 for the appropriate permit. Each applicant will have 120 days to complete the identified requirements to receive the energized facilities access permit.

4.2 Renewing an Existing Permit

To renew a Permit, the applicant must take and pass the necessary Permit exam during the identified renewal cycle.

Renewals occur between March 1st and May 31st of odd-numbered years regardless of the date the original Permit was issued.

When renewing a Permit, the submittal of an Energized Facilities Access Request is NOT required.

4.3 Reinstating A Permit

If a Permit was held during the current Permit cycle, and the current NERC CIP Field Training has been completed, it can be reinstated by the submittal of an Energized Facilities Access Request application (BPA F 6500.11e) form.

If a Permit was held within one Permit cycle of the current Permit cycle, the completion of the APM Safe Workplace Training and Substation Tour requirements may be waived.

If a Permit has NOT been held within one Permit cycle of the current Permit cycle, the person must meet the requirements for a new Permit.

4.4 Changing a Permit Level

All requests for Permit level changes require the submission of an Energized Facilities Access Request (BPA F 6500.11e). Requests must be received and approved by Substation Operations. The Permit holder will be notified once the request has been approved. Requests can be emailed to the Substation Operations Group mailbox:

- When changing to a lower level Permit than what is currently held, an exam for the lower Permit level is not required if requested within the current Permit cycle, however the applicant must submit an Energized Facilities Access Request application BPA F 6500.11e) form

- When changing to a higher level Permit, the applicant must submit an Energized Facilities Access Request application BPA F 6500.11e) form and meet the minimum requirements and complete all items listed in Section 5.

4.5 Permit Cycles

Permits must be renewed on a two-year cycle. All Permits expire on May 31st of odd numbered calendar years regardless of the date of issue. There are two exceptions to the two year cycle, as defined in Section 4.5.1, Students Requiring Permits and 4.5.2, Craft Apprentices and Trainees.

4.5.1 Students Requiring Permits

Students will only be issued Access Permits. Permits for students requiring access to energized facilities will be granted after fulfilling

the Permit requirements for the duration of their appointment, not to exceed three months. The end date of their temporary assignment requiring the Permit must be listed on the Energized Facilities Access Request. Student Permits will not be granted if the Assignment End Date is not provided on the Application.

The Permit will expire on the end date listed on the Application or three months from the time of the Permit approval, whichever comes first. Access Permits for students may be renewed as necessary for additional three month periods with the submittal of an Energized Facilities Access Request for each extension.

The manager of the Student Program must sign the applications for all students requesting a permit.

Students will not be issued an Energized Facilities Key.

4.5.2 Craft Apprentices and Trainees

Craft apprentice and trainee Permits will remain valid for the duration of their training programs. If the Permit level changes, a new passing exam and Energized Facilities Request is required.

NOTE: BPA employees who transfer to a Trainee program and currently hold an Electrical Worker Permit and Clearance Certification may retain the Electrical Worker Permit during the Trainee program; however the Clearance Certification will be removed. A new Energized Facilities Request is required.

4.6 Permit Exams

All persons requesting a Permit must pass a written closed book exam for the appropriate Permit Level before the Permit will be issued. The Manager of the Substation Operations Group is responsible for the development and administration of all exams required for Permits.

For information regarding Clearance Certification exams refer to Section 11.

4.6.1 Permit Exam Policy

The Permit and Clearance Certification Exam Policies in this section outline the requirements for the exam process.

4.6.1.1 Permit Exam Policy – General Requirements

The following requirements apply to all persons taking a Permit exam:

- All exams must be administered and graded by Test Administrators designated by the Manager of the Substation Operations Group.
- Exams must be proctored and are closed book. (i.e., references, aids, etc. are not permitted to be used during exams).
- All persons requesting a Permit will have two opportunities to take and pass the Permit for Energized Access Exam. Failure of two exams will result in the failure to obtain and/or maintain the Permit for Energized Access.
- Failure of two exams in a calendar year will result in failure to obtain any Permit for the remainder of the calendar year. **Upon failure of a second exam, a person's current Permit will be revoked.**
- 88% of questions must be answered correctly to be considered passing. Incorrectly answering any part of a question constitutes an incorrect answer for that question.
- Upon failure of an initial exam, a second opportunity (retake) may be given <u>no earlier than 14 days</u> from the date of the first failure.

4.6.1.2 Permit Exam Policy – When Condition of Employment

When a Permit for Energized Access is a condition of employment for BFTE, an employee is eligible for a third (final) opportunity to take and pass an exam.

Refer to the exam policy for detailed information regarding the process for the third exam.

4.6.2 Exam Administration

The Manager of the Substation Operations Group may delegate the administration of the exams to Approved Test Administrators. The list of Approved Test Administrators is available on the TOZ SharePoint site.

- First exams may be administered by any Approved Test Administrator.
- A second exam (retake) <u>shall</u> only be administered by a Chief Substation Operator, Control Center Manager, or Substation Operations Group staff member designated as an Approved Test Administrator.

- Third exams may only be administered by the Substation Operations Group.

If a person fails to follow the Test Administrator's instructions, or if the Test Administrator witnesses any portion of the testing policy being violated (i.e., cheating, photographing the exam, etc.) during the exam, the exam will be counted as a failure.

If an exam is administered prior to the person being eligible to take the exam, the exam will be considered void.

4.7 Implementation of NERC CIP 004 Access Requirements

NERC CIP 004 requires a quarterly review of personnel having access to NERC CIP sites and a review of personnel changes for those persons at the time of the notification.

4.7.1 Quarterly Access Verification (QAV)

During the last month of each quarter (March, June, September & December) Performance Managers will receive a list of their personnel who have unescorted energized access. The Performance Manager must review the list and determine if the person has a continued need for energized access.

Failure to respond by the required date will result in revocation of the person's energized access and Permit.

4.7.2 Access Review of Personnel Changes

All personnel changes for persons with unescorted energized access must be reviewed to determine if there is a continued need for the access.

4.7.2.1 Change in Employment Status

Any change in employment status of BPA employees (BFTE), supplemental labor (CFTE), or Non-CFTE who have been granted access to BPA energized facilities (i.e. due to retirement, resignation, termination for cause, end of contract, etc.) must have their electronic access revoked within 24 hours of the effective date. Failure to meet this requirement will result in a self-report by BPA to WECC of the violation of this requirement.

In order to accomplish access revocation within the 24-hour requirement, report the action to the Access Revocation Team by calling 503-230-LOCK (5626) or email at Revoke@bpa.gov with the information listed below. In addition, the Substation Operations

Group, (TOZ), should be notified by email at subops@bpa.gov and provided the following information:

- The name of the person
- The date/time of the action
- The type of change (separation, retirement, etc.)
- The company the person was employed by

Worker Type	Responsible Party
Federal Employees (BFTE)	BPA Manager
Supplemental Labor Contractors (CFTE)	COR/BPA Manager
Non-Supplemental Labor Contractors (Non-CFTE)	Assigned COR/BPA Manager

Notification is to be done as soon as the employment status change is known, but no later than 4 hours after the change in employment status is effective. The Access Revocation Team may be contacted any time 24/7.

4.7.2.2 Change of Position

If a person's role changes, TOZ must review the access change. TOZ will automatically approve continued energized access for the following HRmis actions:

- Reorganizations
- Craft specific promotions
- Craft specific details
- Realignments
- Duty location changes

The Substation Operations Group will contact the gaining Manager for the following HRmis actions:

- Competitive promotions
- Temporary promotions
- CFTE to BFTE conversions
- Student conversions
- Details
- Reassignments
- Change to lower grades

The gaining Manager has seven days from the time they are contacted by the Substation Operations Group to respond regarding the person's need for energized access.

If the person will need to retain energized access, the gaining Manager must submit a new Energized Facilities Access Request to the Substation Operations Group.

If the gaining Manager fails to respond within the seven day period, the person's energized access will be revoked. The person's energized access may be reinstated by following the process outlined in Section 4.3 "Reinstating a Permit."

For Leave Without Pay (LWOP) lasting longer than 90 days, the Substation Operations Group will revoke the person's energized access. When the person returns, an email from the person's Manager to the Substation Operations Group requesting the reinstatement of energized access is required to reinstate their energized access. Submission of an Energized Facilities Access Request is not required.

All suspension actions will result in removal of energized access for the duration of the suspension. If the person is in possession of an Energized Facilities Key, follow the process outlined in Section 7.1.4 "Return of Energized Facilities Key."

5. PERMITS

A Permit for Energized Access is required for unescorted access to an energized facility. The person's qualifications and the work to be performed determine Permit level.

5.1 Access Permit

An Access Permit allows unescorted access into, out of and movement within energized facilities, for the purpose of observation only, by persons who have received appropriate instructions, training and demonstrated a level of understanding necessary to safely move about within energized facilities.

An Access Permit holder must:

- Remain on the ground at all times
- Not open any cabinet doors or access panels on electrical equipment which exposes bare electrical terminals or wires
- Not manipulate any equipment in any manner unless escorted by a qualified permitted person.
- Access Permit holders may only perform work when escorted by someone with an appropriate level Permit for the work being performed.

5.1.1 Minimum Requirements

To obtain an Access Permit, the following requirements must be met:

- Energized Facilities Access Request
- SLMO approval (CFTE only)
- Knowledge and understanding of the Rules of Conduct Handbook
- Knowledge and understanding of APM safety rules defined in Section 10.1 of the Rules of Conduct Handbook (BFTE and CFTE only)
- Knowledge and understanding of the Contractor Safety and Health Requirements for Prime and Subcontractors (Non-CFTE only)
- Passing Access Permit Exam
- Substation Tour
- NERC CIP Field Training (current year)
- Personnel Risk Assessment completion

Access Permit Requirements

	BFTE	CFTE	Non-CFTE
Energized Facilities Access Request	YES	YES	YES
SLMO approval		YES	
Knowledge and understanding of ROCH	YES	YES	YES
Knowledge and understanding of APM safety rules defined in Section 10.1	YES	YES	
Knowledge and understanding of the Contractor Safety and Health Requirements for Prime and Subcontractors			YES
Passing Access Permit Exam	YES	YES	YES
Substation tour	YES	YES	YES
NERC CIP field training	YES	YES	YES
Personnel Risk Assessment completion	YES	YES	YES

5.1.2 Process to Obtain an Access Permit

The process must begin with the submittal of an Energized Facilities Access Request (BPA F 6500.11e) to the Substation Operations Group.

When each person, or their Manager/COR, receives confirmation from the Substation Operations Group, they may proceed with scheduling an exam through an Approved Test Administrator. An exam taken before confirmation is received will be voided.

NOTE: The person is not eligible to take the Permit exam until they have received confirmation from the Substation Operations Group that the request has been approved.

Each person is responsible for ensuring they have completed the following:

- Passing Permit Exam – taken with an Approved Test Administrator. The Test Administrator will submit the exam to the Substation Operations Group.
- Substation electrical Hazard Awareness Tour – taken with a Chief Substation Operator or their designated Substation Operator. The person conducting the tour will submit the required tour form to the Substation Operations Group.
- NERC CIP Field Training – available online through the BPA Homepage or in hardcopy form for persons without network access.

The Substation Operations Group is responsible for verifying:

- Personnel Risk Assessment completion
- SLMO approval for CFTE

Once all requirements have been met, an Access Permit will be granted.

Electronic access to energized facilities will be granted after successful completion of the Permit process.

Permitted persons needing access to energized facilities that do not have electronic access (non-swipe sites) must request an Energized Facilities Key. Refer to Rules of Conduct Handbook - Section 7.1.1 “Requesting a New Energized Facilities Key” for further instruction.

5.2 Non-Electrical Worker Permit

This Permit allows unescorted access into, out of and movement within energized facilities to perform predefined work not affecting the electrical operation of the power system by persons who have received appropriate instructions and training, and have demonstrated a level of understanding necessary to safely move about within energized facilities.

A Non-Electrical Worker Permit holder must:

- Possess a need to perform Non-electrical duties in or around energized facilities.
- Not open any cabinet doors or access panels on electrical equipment which exposes bare electrical terminals or wires.
- Not manipulate any high voltage equipment in any manner unless escorted by a qualified permitted person.
- Have direct, on-site supervision of a person holding an Electrical Worker Permit acting as a Safety Watcher when performing any work involving the possibility of inadvertent contact with high voltage parts or the violation of MAD.

Non-Electrical Work Permit holders may escort a non-permitted person for work allowed by an Access or Non-Electrical Work Permit.

Examples:

- FMWs
- Painters
- Carpenters
- Plumbers
- Truck drivers
- Riggers
- HMEMs
- Security specialists
- Environmental specialists
- Janitors

5.2.1 Minimum Requirements

To obtain a Non-Electrical Worker Permit, the following requirements must be met:

- Energized Facilities Access Request
- SLMO approval (CFTE only)
- Knowledge and understanding of the Rules of Conduct Handbook
- Knowledge and understanding of APM safety rules defined in Sections 10.1 and 10.2 (BFTE and CFTE only)
- Knowledge and understanding of the Contractor Safety and Health Requirements for Prime and Subcontractors (Non-CFTE only)
- Passing Non-Electrical Worker Permit Exam
- Substation Tour
- NERC CIP Field Training (current year)
- Personnel Risk Assessment completion

Non-Electrical Worker Permit Requirements

	BFTE	CFTE	Non-CFTE
Energized Facilities Access Request	YES	YES	YES
SLMO approval		YES	
Knowledge and understanding of ROCH	YES	YES	YES
Knowledge and understanding of APM safety rules defined in Sections 10.1 and 10.2	YES	YES	
Knowledge and understanding of the Contractor Safety and Health Requirements for Prime and Subcontractors			YES
Passing Non-Electrical Worker Permit Exam	YES	YES	YES
Substation tour	YES	YES	YES
NERC CIP field training	YES	YES	YES
Personnel Risk Assessment completion	YES	YES	YES

5.2.2 Process to Obtain a Non-Electrical Worker Permit

The process must begin with the submittal of an Energized Facilities Access Request (BPA F 6500.11e) to the Substation Operations Group.

When the person, or the Manager/COR, receives confirmation from the Substation Operations Group, they may proceed with scheduling an exam through an Approved Test Administrator. An exam taken before confirmation is received will be voided.

NOTE: The person is not eligible to take the Permit exam until they have received confirmation from the Substation Operations Group that the request has been approved.

Each person is responsible for ensuring they have completed the following:

- Passing Permit Exam – taken with an Approved Test Administrator. The Test Administrator will submit the exam to the Substation Operations Group.
- Substation Tour – taken with a Chief Substation Operator or their designated Substation Operator. The person administering the tour will submit the required tour form to the Substation Operations Group.
- NERC CIP Field Training – available online through the BPA Homepage or in hardcopy form for persons without network access.

The Substation Operations Group is responsible for verifying:

- Personnel Risk Assessment completion
- SLMO approval for CFTE

Once all requirements have been met, a Non-Electrical Worker Permit will be granted.

Electronic access to energized facilities will automatically be granted after successful completion of the Permit process.

Permitted persons needing access to energized facilities not having electronic access must request an Energized Facilities Key. Refer to Rules of Conduct Handbook, Section 7.1.1 “Requesting a New Energized Facilities Key” for further instruction.

5.3 Restricted Electrical Worker Permit

This Permit allows unescorted access into, out of and movement within energized facilities to perform selective craft or technical functions involving work that could have an impact on the power system by persons who have received appropriate instructions, training and have demonstrated a level of understanding necessary to safely move about within energized facilities.

A Restricted Electrical Worker Permit holder must:

- Have knowledge and understanding of hazards inherent and precautions required for working safely on applicable parts of the high voltage system.
- Be trained, and have the requirement, to perform specific, selective craft or technical functions involving work that could have an effect on the power system up to the applicable MAD.
- Must perform work under the direct, on-site supervision of a person holding an Electrical Worker Permit for any work involving the possibility of inadvertent contact with high voltage parts or the violation of MAD.

A Restricted Electrical Worker Permit holder may escort a non-permitted person for work allowed by an Access, Non-Electrical Worker, or Restricted Electrical Worker Permit.

Examples of Restricted Electrical Worker Permit Holders:

- Craft apprentices
- Craft trainees
- Line Equipment Operators
- Electrical/Electronic Engineers

5.3.1 Minimum Requirements

To obtain a Restricted Electrical Worker Permit, the following requirements must be met:

- Energized Facilities Access Request
- SLMO approval (CFTE only)
- Knowledge and understanding of the Rules of Conduct Handbook
- Knowledge and understanding of APM safety rules (BFTE and CFTE only)
- Knowledge and understanding of the Contractor Safety and Health Requirements for Prime and Subcontractors (Non-CFTE only)
- Passing Restricted Electrical Worker Permit Exam
- Substation Tour
- APM Safe Workplace Training (BFTE and CFTE only)
- NERC CIP Field Training (current year)
- Personnel Risk Assessment completion

Restricted Electrical Worker Permit Requirements

	BFTE	CFTE	Non-CFTE
Energized Facilities Access Request	YES	YES	YES
SLMO approval		YES	
Knowledge and understanding of ROCH	YES	YES	YES
Knowledge and understanding of APM safety rules	YES	YES	
Knowledge and understanding of the Contractor Safety and Health Requirements for Prime and Subcontractors			YES
Passing Restricted Electrical Worker Permit Exam	YES	YES	YES
Substation tour	YES	YES	YES
NERC CIP field training	YES	YES	YES
Personnel Risk Assessment completion	YES	YES	YES
APM Safe Workplace Training	YES	YES	

5.3.2 Process to Obtain a Restricted Electrical Worker Permit

The process must begin with the submittal of an Energized Facilities Access Request (BPA F 6500.11e) to the Substation Operations Group.

When the person, or the Manager/COR, receives confirmation from the Substation Operations Group, they may proceed with scheduling an exam through an Approved Test Administrator. An exam taken before confirmation is received will be voided.

NOTE: The person is not eligible to take the Permit exam until they have received confirmation from the Substation Operations Group that the request has been approved.

Each person is responsible for ensuring they have completed the following:

- Passing Permit Exam – taken with an Approved Test Administrator. The Test Administrator will submit the exam to the Substation Operations Group.
- Substation Tour – taken with a Chief Substation Operator or their designated Substation Operator. The person administering the tour will submit the required tour form to the Substation Operations Group.
- APM Safe Workplace Training – in person class that occurs once per quarter. Registration for the class is done through HRmis.
- NERC CIP Field Training – available online through the BPA Homepage or in hardcopy form for persons without network access.

The Substation Operations Group is responsible for verifying:

- Personnel Risk Assessment completion
- SLMO approval for CFTE

Once all requirements have been met, a Restricted Electrical Worker Permit will be granted.

Electronic access to energized facilities will automatically be granted after successful completion of the Permit process.

Permitted persons needing access to energized facilities not having electronic access must request an Energized Facilities Key. Refer to Rules of Conduct Handbook Section 7.1.1 “Requesting a New Energized Facilities Key” for further instruction.

5.4 Electrical Worker Permit

This Permit allows unescorted access into, out of and movement within energized facilities for the performance or supervision of work on the high voltage power system by fully trained and experienced qualified electrical workers.

An Electrical Worker Permit holder must:

- Need to perform, supervise/manage functions on or around energized facilities beyond those allowed by a Non-electrical or Restricted Electrical Worker Permit.
- Understand hazards inherent and precautions required for working safely on a high voltage power system as demonstrated by one of the following:
    - Related electrical theory and qualification as a journeyman or higher in one of the high voltage electrical crafts such as Electrician, Lineman, Substation Operator, Dispatcher or Craftsman.
    - Rating of GS-9 or higher (or equivalent for Non-CFTE) in one of the classifications, including Field or District Engineer, Commissioning and Testing field Engineer and Technician or Laboratories and Field Service Engineer or equivalent positions.
- Experience: One year minimum in a position that meets the minimum requirements for an Electrical Worker Permit on BPA or equivalent high voltage power system.

Electrical Worker Permit holders may escort without predefined restrictions.

5.4.1 Minimum Requirements

To obtain an Electrical Worker Permit, the following requirements must be met:

- Energized Facilities Access Request
- SLMO approval (CFTE only)
- Knowledge and understanding of the Rules of Conduct Handbook
- Knowledge and understanding of APM safety rules (BFTE and CFTE only)
- Knowledge and understanding of the Contractor Safety and Health Requirements for Prime and Subcontractors (Non-CFTE only)
- Passing Electrical Worker Permit Exam

- Substation Tour
- APM Safe Workplace Training (BFTE and CFTE only)
- NERC CIP Field Training (current year)
- Personnel Risk Assessment completion

Electrical Worker Permit Requirements

	BFTE	CFTE	Non-CFTE
Energized Facilities Access Request	YES	YES	YES
SLMO approval		YES	
Knowledge and understanding of ROCH	YES	YES	YES
Knowledge and understanding of APM safety rules	YES	YES	
Knowledge and understanding of the Contractor Safety and Health Requirements for Prime and Subcontractors			YES
Passing Electrical Worker Permit Exam	YES	YES	YES
Substation tour	YES	YES	YES
NERC CIP field training	YES	YES	YES
Personnel Risk Assessment completion	YES	YES	YES
APM Safe Workplace Training	YES	YES	

5.4.2 Process to Obtain an Electrical Worker Permit

The process must begin with the submittal of an Energized Facilities Access Request (BPA F 6500.11e) to the Substation Operations Group.

When the person, or the Manager/COR, receives confirmation from the Substation Operations Group, they may proceed with scheduling an exam through an Approved Test Administrator. An exam taken before confirmation is received will be voided.

NOTE: The person is not eligible to take the Permit exam until they have received confirmation from the Substation Operations Group that the request has been approved.

The person is responsible for ensuring they have completed the following:

- Passing Permit Exam – taken with an Approved Test Administrator. The Test Administrator will submit the exam to the Substation Operations Group.
- Substation Tour – taken with a Chief Substation Operator or their designated Substation Operator. The person administering the tour will submit the required tour form to the Substation Operations Group.
- APM Safe Workplace Training – in person class that occurs once per quarter. Registration for the class is done through HRmis.
- NERC CIP Field Training – available online through the BPA Homepage or in hardcopy form for persons without network access.

The Substation Operations Group is responsible for verifying:

- Personnel Risk Assessment completion
- SLMO approval for CFTE

Once all requirements have been met, an Electrical Worker Permit will be granted.

Electronic access to energized facilities will automatically be granted after successful completion of the Permit process.

Permitted persons needing access to energized facilities not having electronic access must request an Energized Facilities Key. Refer to Rules of Conduct Handbook Section 7.1.1 “Requesting a New Energized Facilities Key” for further instruction.

Electrical apprentices and craftsmen trainees who have not previously qualified in one of the electrical crafts or classifications will not be issued an Electrical Worker Permit or Clearance Certification until completion of their training.

6. METHODS OF ENERGIZED ACCESS

Physical access to a substation may be gained through a hard key or electronic access. To obtain either type of access, the person must possess a Permit for Energized Access.

6.1 Electronic Energized Access

Electronic access to energized facilities will be added to the ID badge and proximity card for persons having completed the Permit process. Only the Substation Operations Group has the authority to add energized access to the badge and card.

ID badges and proximity cards must have personalized pin codes assigned to them in order for the cards to work at energized facility card readers. If the pin code is missing from an ID or proximity card, contact AMS Security for instructions on how to assign a personalized pin code. Non-CFTE should contact their COR for facilitating this process.

6.2 Energized Access Keys

An Energized Access Key provides access to an energized facility. They are to only be issued when the appropriate requirements have been met.

There are three types of Energized Access Keys:

- Alternate Access Key (AAK)
- Energized Facility Key (EFK)
- Site Specific Key (SSK)

6.2.1 Alternate Access Keys

An Alternate Access Key grants access to a NERC CIP facility with electronic access (a swipe site) in the event of an electronic access system failure which prevents workers and AMS security personnel from operating the door electronically.

For information on accessing a swipe site when the electronic card readers are inoperative, refer to BPA-WS-2-4, Site Specific and Alternate Access to Substations.

6.2.2 Energized Facilities Keys

An Energized Facilities Key (EFK) allows unescorted access into energized facilities which do not have electronic access. An EFK will only be issued to persons possessing a Permit. Only the Substation Operations Group, or a Chief Substation Operator with the approval of the Substation Operations Group, shall issue a replacement EFK.

Persons needing access to energized facilities which do not have electronic access must request an EFK through the process identified in Rules of Conduct Handbook Section 7.1.1.

6.2.3 Site Specific Keys

A Site Specific Key allows access into a specific energized facility and is issued through the local Chief Substation Operator. Site specific energized locks are installed on facilities which **do not** have electronic access.

7. ENERGIZED ACCESS KEY POLICY

Access to an energized facility through the use of an Energized Access Key by a person without appropriate authorization is considered unauthorized and is a violation of the Energized Access Key Policy.

7.1 Energized Facilities Key

The Energized Facilities Key is BPA property and is to be used for official business only. It is to be protected from being lost or stolen, and must be reported immediately to the Substation Operations Group if either situation occurs.

An Energized Facilities Key:

- Shall **NOT** be duplicated.
- Shall **NOT** be loaned or used by anyone other than to whom it is issued.

The key **MUST** be returned to the Substation Operations Group **within 7 days** of the key holder no longer requiring access or no longer having authorization to access BPA energized facilities.

The Chief Substation Operator, Supplemental Labor Office (for CFTE) and the Contracting Officer's Representative (for Non-CFTE) have delegated authority to accept a key on behalf of the Substation Operations Group to fulfill the Energized Facilities Key Policy. The delegated authority accepting possession of the Energized Facilities Key will immediately notify the Substation Operations Group that they are in possession of the key.

7.1.1 Requesting a New Energized Facilities Key

The Energized Facilities Key portion of the Energized Facilities Access Request (BPA F 6500.11e) shall be completed with required signatures of either the Permit holder's manager or an official designated by Substation Operations Group and submitted (in original hard copy) to the Substation Operations Group.

7.1.2 Damaged Energized Facilities Keys

The Energized Facilities Key portion of the Energized Facilities Access Request (BPA F 6500.11e) shall be completed with required signatures and submitted with the damaged key to the Substation Operations Group. If a replacement key is required, select the "New Key" box in addition to the "Damaged Key" box. The form shall be signed by the Permit holder's manager or official designated by

Substation Operations Group, and submitted to the Substation Operations Group.

7.1.2 Lost Energized Facilities Keys

A lost key must be reported immediately to the Substation Operations Group. To report a key as lost, the following forms must be completed and submitted to the Substation Operations Group and the Physical Security Group:

- Energized Facilities Access Request (form 6500.11e)
- Property Loss Report (form 4420.12e)
- Security Incident Report (form 5632.01e)

If a replacement key is required, an Energized Facilities Access Request (form 6500.11e) shall be completed by selecting the “Lost Key” and “New Key Request” boxes. The form shall be signed by the Permit holder’s manager or designated official and submitted to the Substation Operations Group. If a replacement key is required, select the “New Key” box in addition to the “Lost Key” box.

A replacement key will not be issued sooner than 5 days from the time the completed Energized Facilities Access Request is received by the Substation Operations Group.

7.1.3 Stolen Energized Facilities Keys

A suspected stolen key shall be reported to the Substation Operations Group immediately. A Security Incident Report, form 5632.01e shall be filled out and submitted to Security Services **and** the Substation Operations Group, within 24 hours. If a replacement key is required, an Energized Facilities Access Request (form 6500.11e) shall be completed by selecting the “Lost Key” and “New Key Request” boxes. The form shall be signed by the Permit holder’s manager or designated official and submitted to the Substation Operations Group.

A replacement key will not be issued sooner than 5 days from the time the completed Energized Facilities Access Request is received by the Substation Operations Group.

7.1.4 Return of Energized Facilities Key

When a Permit is suspended or revoked, the Permit holder must surrender the EFK to the Chief Station Operator or return the Energized Facilities Key immediately to Substation Operations.

Failure to return the key is a violation of the Energized Access Key Policy and will result in the delay of a Final Pay Clearance for BFTE and a potential fine to the contracting company of the CFTE or Non-CFTE.

7.1.5 Chief Substation Operator Issuance of an Energized Facilities Key

Chief Substation Operators may, at their discretion, assign an Energized Facilities Key to a person who has met the necessary requirements. Upon issuing an Energized Facilities Key the Chief Substation Operator will notify the Substation Operations Group of the transfer by submitting an Energized Facilities Access Request (form BPA F 6500.11e) by mail or fax, or via e-mail that will include the person's name and the key number.

If replacing a damaged key, the Chief Substation Operator will retrieve and return the damaged key to the Substation Operations Group. If a previously presumed lost Energized Facilities Key is found, the Chief Substation Operator shall retrieve it and send it to the Substation Operations Group, identifying it as a previously lost key.

7.2 Site Specific Key

A Site Specific Key is BPA property. The key is to be used for official business only. The key shall be protected from loss or theft. If loss or theft occurs, it shall be reported immediately to the Chief Substation Operator.

The Chief Substation Operator maintains a key inventory for all facilities with Site Specific Key access within the district. The key is to be returned to the Chief Substation Operator when access is no longer required to the specific energized facility. The key cannot be duplicated. It shall never be loaned or used by anyone other than to whom it is issued.

8. SUBSTATION SECURITY

8.1 Responsible Party

Security of a substation is the responsibility of the person unlocking the entrance. Do not allow unauthorized persons to enter the substation. While unlocked, doors or gates must be physically attended at all times.

The last person out of an energized facility assumes the responsibility of making certain that all perimeter entrances and windows are closed and locked.

At NERC CIP sites, the first person who enters the facility must disarm the alarm panel. Each person with energized access must use their ID or proximity card and PIN prior to entry at the card reader and PIN pad. Tailgating is not allowed for entry or exit of an energized facility. Each person with energized access must present their ID or proximity card to the exit reader prior to exiting the facility.

Personnel who are authorized access but have lost, misplaced, or forgotten their ID or proximity card must call AMS at 360-418-2470 when they enter and exit a NERC CIP site to have AMS manually log the person in and out. At NERC CIP sites, personnel must verify that the alarm panel is armed prior to exit. Detailed instructions are posted at each NERC CIP site.

8.2 Substation Access Protocol

Personnel entering a substation who are unfamiliar with the facility or are infrequent visitors to the facility shall contact District Substation Operations prior to entry for information on known hazards.

All persons performing work at an energized facility shall inform the Substation Operator having jurisdiction prior to beginning work and at the conclusion of the work. District phone numbers for District Substation Operations are listed in Appendix B of this document and on the Substation Information Directory posted at each substation.

Entry and exit during normal working hours does not require contacting the control center having jurisdiction, unless BPA is on a high alert (SECON 1, Severe). Entry and exit outside of normal working hours requires contacting the control center having jurisdiction. Normal working hours are considered 0600-1800, Monday through Friday.

When responding to trouble at any time, entry requires contacting the control center having jurisdiction. Contact numbers are posted on the Substation Control of Entry sign (Figure A) located on the substation entry door or gate.

Control of entry and exit to a facility under construction is the responsibility of the Construction and Maintenance Services Group, within Transmission Field Services or the Project Contractor until any portion of the station is released to System Operations.

The name of the construction supervisor or the Test and Energization Engineer in charge is prominently posted in the control house and/or temporary project headquarters. Control of entry to a facility in which any part has been released to System Operations is the responsibility of the district Substation Operations. The Chief Substation Operator is responsible for posting “Substation Control of Entry” signs.

BONNEVILLE POWER ADMINISTRATION

[SUBSTATION NAME]

SUBSTATION CONTROL OF ENTRY

CONTACT PERSONNEL

Contact the following personnel for information regarding entry to this substation, to report a fire, an injury incident in the substation, breach of security, unauthorized entry.

BPA MUNRO DISPATCHER > SPOKANE, WA

(509) 465-1820 (24 HOURS)
OR
(509) 465-1826 (24 HOURS)

If uncertain of the station name, locate the name from the sign on perimeter fence or at the entrance to the station.

Figure A

8.3 Entry, Exit and Work Performed Logging

8.3.1 All Energized Facilities

A Substation Operating Log is required at each substation. A Substation Security Log is required at NERC CIP substations and may be used at other substations. Each person entering an energized facility is required to sign in and sign out of the Substation Security Log or the Substation Operating Log if the Substation Security Log is not used.

The required information to enter into the log book, when signing in is:

- First and last name of each person entering
- Date and time of entry and departure
- Reason for entry
- Organization represented
- Escort’s name if applicable
- Escort Location (checkbox; Yard, and/or PSP)

All work performed in a substation is to be documented in the Substation Operating Log.

The person in charge of a crew may sign in and out all workers, listing each person's name with other required information stated above.

The following Instructions (Figure B) are located inside the front page of the Substation Operating Log and serves as a reminder of the required information that must be entered into the log.

BPA F 6510.30
(08-18)
(Prior edition usable

BONNEVILLE
POWER ADMINISTRATION

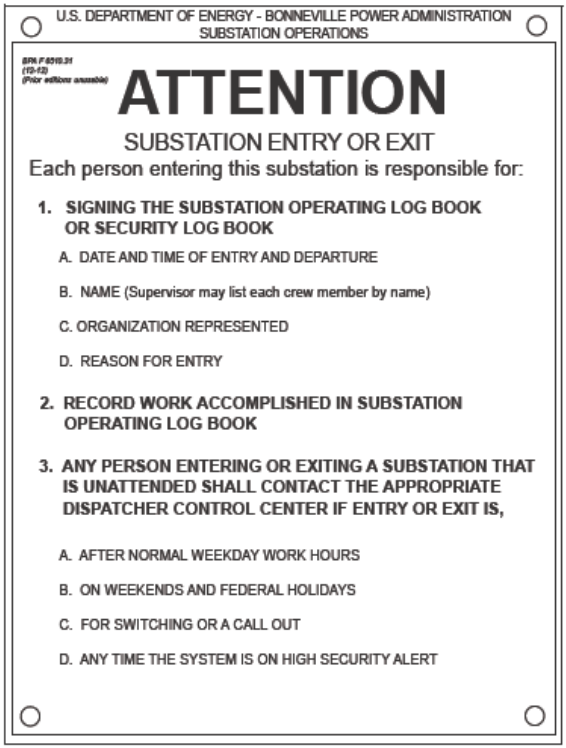
INSTRUCTIONS

THE FOLLOWING INFORMATION SHALL BE ENTERED IN THE SUBSTATION OPERATING LOG:

1. Name, organization represented, date, time of entry and departure, escort name (if applicable) and reason for EACH person entering. (This information shall be logged in the Substation Security Log, if one is provided.)
2. Work performed while in the substation, including adjustment or changes to equipment.
3. Routine and trouble switching in the sequence it was performed.
4. Switch Orders are logged exactly as they were written on the Switching Order form. All portions of the Switching Order form shall be logged by the switchman completing the Switching Order.
5. PCB operations, including reason for operation, time, and counter reading.
6. Automatic PCB operations:
   - Time of operation and counter reading.
   - Reason for operation.
   - Relay targets, abnormal meter readings, equipment temperatures and voltages.
   - Name, location and title of person(s) to whom the trouble is reported.
   - Weather conditions, if pertinent to the trouble.
7. Following equipment inspections, log the status: normal, problems found, and/or abnormal conditions found.
8. ALL LOG ENTRIES ARE TO BE MADE IN INK. IF A MISTAKE IS MADE, IT IS TO BE LINED OUT AND INITIALED.
9. LOG THE FOLLOWING USING RED INK:
   - AUTOMATIC PCB OPERATIONS.
   - GROUND SWITCH OPERATIONS.
   - CLEARANCES AND HOLD ORDERS ISSUED BY OR RELEASED TO THE OPERATOR.

Figure B

A Substation Entry sign (Figure C) shall be posted at the entrance to a substation, stating responsibilities of each person entering a substation. These responsibilities are to be strictly followed.



U.S. DEPARTMENT OF ENERGY - BONNEVILLE POWER ADMINISTRATION
SUBSTATION OPERATIONS

BPA F 6510.31
(12-12)
(Prior editions unusable)

ATTENTION

SUBSTATION ENTRY OR EXIT

Each person entering this substation is responsible for:

1. **SIGNING THE SUBSTATION OPERATING LOG BOOK OR SECURITY LOG BOOK**
   - A. DATE AND TIME OF ENTRY AND DEPARTURE
   - B. NAME (Supervisor may list each crew member by name)
   - C. ORGANIZATION REPRESENTED
   - D. REASON FOR ENTRY
2. **RECORD WORK ACCOMPLISHED IN SUBSTATION OPERATING LOG BOOK**
3. **ANY PERSON ENTERING OR EXITING A SUBSTATION THAT IS UNATTENDED SHALL CONTACT THE APPROPRIATE DISPATCHER CONTROL CENTER IF ENTRY OR EXIT IS,**
   - A. AFTER NORMAL WEEKDAY WORK HOURS
   - B. ON WEEKENDS AND FEDERAL HOLIDAYS
   - C. FOR SWITCHING OR A CALL OUT
   - D. ANY TIME THE SYSTEM IS ON HIGH SECURITY ALERT

Figure C

8.3.2 NERC CIP Sites

At NERC CIP sites the Substation Security Log will contain an Escort Location column to designate whether persons being escorted will be entering the Physical Security Perimeter (PSP) and/or Yard. The PSP is the building(s) containing critical cyber assets officially designated as the CIP Site.

If the person(s) being escorted will not be entering the control house or relay house, then check the box under “Yard.” If they will be entering the control house or relay house, then check the box under “PSP.” If they will be entering the yard and control/relay house, then check both the “Yard” & “PSP” boxes.

8.4 Escorting

8.4.1 All Energized Facilities

Entry into, exit out of, and movement within an energized facility by a non-permitted person requires an escort. Escorts must hold a Permit which would allow them to perform work at or above the level of the work to be performed by the person(s) being escorted. Non-permitted persons require the continual presence of the escort.

A permitted worker providing access and escorting duties is responsible for adherence of non-permitted persons to all applicable rules including, but not limited to:

- access to energized facilities
- escorting
- substation security
- applicable Accident Prevention Manual (APM) rules and procedures
- Knowledge and understanding of the Contractor Safety and Health Requirements for Prime and Subcontractors

If the persons being escorted will be entering within 15 feet of voltages up to 345 kV or 20 feet for voltages above 345 kV, on foot or in a vehicle, the escort shall provide each non-permitted person the following information for each substation in which they are being escorted:

- Procedure for identifying energized equipment
- All voltages present in the yard and how to identify voltage level of specific equipment
- The Minimum Approach Distance for all voltages in the yard
- The hazards associated with violation of the Minimum Approach Distances

Non-permitted persons who are working continuously at the same location need only be given the above information on the first day. If their work at the location is interrupted for more than five days the Non-permitted person must be given the above information again by the escort on re-entry into the substation.

Contractors needing an escort for Permit related training or exam shall be provided an escort by the sponsoring work group or Contracting Officer.

Personnel providing escort shall be responsible for adherence to the requirements of all parts of Section 8.3 for all persons being escorted.

8.4.2 NERC CIP Sites

If personnel being escorted will be entering a control house or relay house at a NERC CIP site the person providing escort, in addition to fulfilling the requirements of Section 8.3, will be required to call AMS at 360-418-2470 and provide the following information on all personnel being escorted:

- Time of entry
- Escort Name
- Name of NERC CIP Site
- Where they will be entering; the PSP (control house, relay house) and/or Yard
- Is the person an employee (with energized access) or a visitor
- First and last name of each person being escorted
- Organization or Company of person being escorted
- Purpose for Access
- Contact number for escort

Upon exiting the facility the escort will call AMS and provide the exit time for all personnel being escorted. Calling AMS is only required on the initial entry and final exit. Failure to accomplish the above procedure will violate BPA's Control of Entry rules and NERC CIP 006.

If personnel being escorted will not be entering a control house or relay house, contacting AMS is not required.

8.5 Unauthorized Entry, Breach of Security, Damage, Suspicious Object

Upon discovery of an indication of forced entry or other breaches of security through a door, window, gate, or hole cut in the perimeter fence, or any suspicious object found or damage or destruction of the facility that is a result of actual or suspected intentional human action:

- Withdraw to a safe location and call 911
- Notify the Control Center having jurisdiction. The Control Center number will be posted on a sign on the front door similar to Figure A in Section 8.2. Dittmer Control Center can be reached at 800-392-0816 Munro Control Center can be reached at 877-836-6632
- Contact AMS at 360-418-2470
- If contacted by the news media, refer them to Public Affairs at 503-230-5131

9. SUBSTATION ELECTRICAL HAZARD AWARENESS

9.1 Voltage Identification

All persons requiring unescorted access into, out of, and movement within energized facilities must possess the knowledge and skills necessary to distinguish energized parts from non-energized parts of the electrical equipment, nominal voltage of exposed parts and corresponding Minimum Approach Distances.

Some of the resources available for identifying voltages in energized facilities are:

- Station prints – one-line diagrams are found in the station print cabinet and are the first diagrams in the station prints.
- Mimic bus color codes – The mimic bus on the control panels is a representation of the layout of the equipment located in the switchyard. The color of the mimic bus indicates the nominal voltage of that equipment.

COLOR	NOMINAL VOLTAGES	COLOR	NOMINAL VOLTAGES
Orange	600vac - 13.8 kV	Purple	34.5kV
Green	69 kV	Yellow	115 kV
Red	230 kV	Red/Blue	287 kV
Red/Yellow	345 kV	Black	500 kV

Letter designations for voltage classifications:

- 230 kV, 287 kV, and 345 kV class - letter designation “A”
- 115 kV, 138 kV and 161 kV class - letter designation “B”
- 69 kV class and below - letter designation “L”
- 500 kV class and above – have no letter designation but uses numbers ranging from 4000 to 6999.

Number and size of insulators – The higher the nominal voltage, the more insulators that are required to keep the voltage from shorting to ground. The following are examples of some of the types of insulators used on the BPA system for different voltages:

Cap-and-Pin and Pin Insulators

Cap-and-pin insulators were used before the development of station post insulators. BPA does not use cap-and-pin insulators in new projects but many are still in service and are nearing end of life. Special solid-core station post replacements for cap-and-pin

insulators may be used in the field, when standard station posts cannot be used.

- A single, non-stacking cap-and-pin insulator is used up to and including 46 kV.

34.5 kV Non-Stacking Cap & Pin

33 kV Pin Insulator

- For voltages 69 kV and above, cap-and-pin insulators are assembled in stacks to provide higher insulation levels.

230 kV Bus Support

115 kV Bus Support

Stacking Cap-and-Pin

These insulators are assembled in stacks for the required voltage rating. They are used for like-replacement and some expansion work

of existing 115 kV, 230 kV, 287 kV, and 345 kV installations. The most common cap-and-pin insulator, TR-140, is stacked as follows:

- Two units for 69 kV
- Three units for 115 kV
- Five units for 230 kV
- Seven units for 345 kV

NOTE: Refer to BPA standard drawings for insulator dimensions.

115 kV Disconnect Support

230 kV Disconnect Support

Station Post Insulators

The three main components are the metal end-castings, the porcelain body, and the cementing media between the metal and the porcelain. Station post-type insulators are customarily classified in two groups:

- Non-stacking or single-unit designs from 7.5 kV to 115 kV.
- Stacking units from 115 kV and above.

Outdoor Non-Stacking Post Type

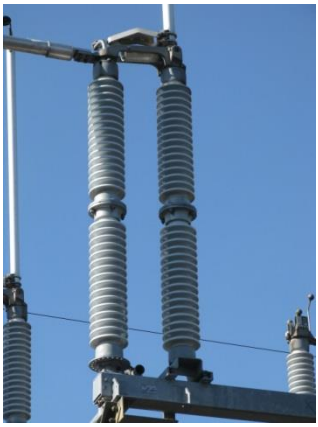
These insulators are single-unit with threaded holes in the cap and base for cap screw mounting. Non-stacking post insulators are used in 12.5 kV through 115 kV installations.

34.5 kV Non-Stacking Post

Outdoor Stacking Post Type

These insulators are comprised of multiple sections bolted together into a stack. Insulators for use at 500 kV may have a BIL of 1550 kV or 1800 kV, depending upon the substation requirements.

115 kV Disconnect



230 kV Disconnect Hinge End

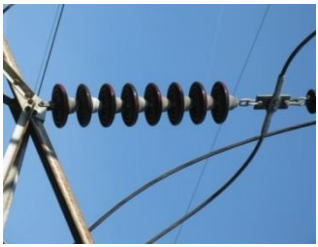
230 kV Disconnect

Strain Bus Insulators

The NEMA standard insulator most commonly used is the ball-and-socket-suspension type.

The number of units used in a string is approximately proportional to the line voltage.

230 kV Riser Bus in Bridge



115 kV Strain Bus

230 kV Line Dead End

9.2 Arc Flash Hazards

BPA Work Standard BPA-WS-11-6, Shock & Arc-Flash Hazard Assessment & PPE, defines work standards required for personnel protection from shock and arc-flash hazards. All Permitted personnel shall be familiar with this work standard and adhere to the requirements defined therein.

9.3 Substation Electrical Hazard Cautions

If you do not hold an Electrical Worker Permit:

- Do not operate any switches, other than light switches, Attended/Unattended switches, NERC CIP pin pads, or other switches required for entering or exiting substation sites, without permission of a Qualified Electrical Worker. Light switches are normally toggle type wall switches. At some

locations control of the building interior lights may be an air circuit breaker (ACB) in an electrical panel. If the ACB's in the panel are not clearly labeled or there is a question as to the proper ACB to operate do not attempt to operate any ACB. Attended/Unattended switches are normally a small toggle type switch on a panel and should be clearly labeled. If the toggle switch is not clearly identified do not operate the switch.

- Do not touch or operate control switches. There are numerous buttons and switches in control houses and switchyards. Only qualified employees operate these control switches.
- Do not touch or reset relay targets, annunciator windows, or alarms. Relay targets, annunciator indications, and alarms help the Substation Operator and power system Dispatcher to ascertain and analyze substation and power system trouble.
- Do not bump, jar, tamper with, or remove covers from relays or control equipment. Removal of relay and equipment covers is a task to be performed by those who operate and maintain them.
- Do not contact any bare conductors, terminals, busses, etc. No person shall contact any high voltage electrical parts unless this equipment has been properly isolated from the electrical system and grounded, as determined by a Qualified Electrical Worker.
- Do not throw or toss objects in or around substations or switchyards. Throwing or tossing objects in energized facilities including switchyards is not allowed at any time.
- Do not disturb or remove any tags. Tags are placed on controls and equipment to provide protection to workers and ensure proper operation of equipment. If a tag is found on the floor or on the ground, report it to a BPA Qualified Electrical Worker. For examples of these tags see Appendix A.

9.4 Substation Electrical Hazard Awareness Tour

Substation tours are required for all personnel when they are requesting their first Permit of any type. Current Permit holders applying for a different Permit level do not need a tour. If a person did hold a Permit in the past, but has not held one within one Permit cycle, a tour is required.

Example 1: A person received a Substation Tour for an Access Permit. The requirements for upgrading to a Non-Electrical Worker Permit would NOT include the completion of another Substation Tour.

Example 2: A person held an Access Permit but changed jobs in February 2016 and lost their Permit. In April 2018 the same person applied for an Access Permit. Because they held a Permit in the cycle that ended May 31, 2017, they do not need a new tour.

Substation Tours cover the following:

- Procedure for entering energized facilities with electronic access
- Requirements for signing in/out and logging work performed at an energized facility
- Control of Entry and Station Security responsibilities
- Control and relay panels and causes of accidental operations
- Clearance Tags and other safety tags in the Control Room and switchyard
- Requirements for wearing hard hats and other required safety equipment
- Getting around the switchyard (sidewalks, cable tray restrictions, etc.)
- Explanation of barriers and guards in a switchyard
- How to identify the Minimum Approach Distance (MAD)
- Explanation of a Reduced Electrical Clearance
- Requirements for operating a vehicle in a switchyard
- Rules governing electrically conductive materials in the control house and switchyard
- Identification of electrical, mechanical, and other known hazards in your work area
- Operation of light switches
- Procedure to follow, when the possibility of an explosive device is present
- Emergency procedures
- How to identify voltage levels in an energized facility
- Allowable limits of Permit holder movement and activities within energized facilities
- Permit holder responsibilities
- Questions and answers

10. SUBSTATION SAFETY

10.1 Access Permit Requirements

BPA employees (BFTE) and Supplemental Labor contractors (CFTE)

Knowledge and understanding of the following Accident Prevention Manual (APM) rules are required for an Access Permit:

APM RULE	APM SECTION
A-2	Apparel
B-1	Barriers & Guards, Electrical
B-2	Barrier & Guards, Non-Electrical
C-1	Conductive Devices, Restrictions of
E-3	Eye and Face Protection
H-1	Head Protection
H-2	Hearing Protection
J-1	Job Briefing
L-4	Lightning, Work Curtailment Criteria
M-1	Minimum Approach Distance

Non-CFTE
Knowledge and understanding of the Contractor Safety and Health Requirements for Prime and Subcontractors is required for an Access Permit.

10.2 Non-Electrical Worker Permit Requirements

BPA employees (BFTE) and Supplemental Labor contractors (CFTE)

Knowledge and understanding of the following Accident Prevention Manual (APM) rules are required for a Non-Electrical Worker Permit:

APM RULE	APM SECTION
A-2	Apparel
B-1	Barriers & Guards, Electrical
B-2	Barrier & Guards, Non-Electrical
C-1	Conductive Devices, Restrictions of
C-3	Confined Spaces
E-1	Excavation
E-3	Eye and Face Protection
F-1	Fall Protection
F-2	Flammable Liquids
G-10	Grounding of Equipment, Tools, and Metallic Cables
H-1	Head Protection
H-2	Hearing Protection
J-1	Job Briefing
L-1	Ladders, Securing of
L-4	Lightning, Work Curtailment Criteria
M-1	Minimum Approach Distance
P-1	Power Equipment
R-1	Rope, Wire
R-2	Rope, Synthetic
R-3	Rigging, Equipment
R-4	Radio Frequency Exposure, for Personal Communications Systems
S-1	Safety Watchers-General
S-3	Safety Watchers for Restricted Electrical and Non-Electrical Workers
S-5	Signals, Hand Signals for Crane Work and Line Work
S-8	Safety Restraints, Vehicle
T-1	Testing Intervals of Tools and Equipment
W-1	Welding

Non-CFTE

Knowledge and understanding of the Contractor Safety and Health Requirements for Prime and Subcontractors is required for a Non-Electrical Worker Permit.

10.3 Restricted Electrical Worker and Electrical Worker Permit Requirements

BPA employees (BFTE) and Supplemental Labor contractors (CFTE)
Knowledge and understanding of the entire Accident Prevention Manual is required for Restricted Electrical Worker and Electrical Worker Permits.

Non-CFTE
Knowledge and understanding of the Contractor Safety and Health Requirements for Prime and Subcontractors is required for a Restricted Electrical Worker and Electrical Worker Permit.

11. CLEARANCE CERTIFICATION

To obtain or issue Clearances or Hold Orders on BPA normally energized equipment, personnel must hold a Clearance Certification for the current cycle.

11.1 Clearance Certification For BPA Employees (BFTE)

Clearances or Hold Orders on BPA normally energized equipment will only be issued to personnel holding an Electrical Worker Permit who are currently Clearance Certified. Tier III managers are responsible for ensuring only those employees who have a need, and have met the minimum requirements to be Clearance Certified take the annual Clearance Certification Exam.

The Clearance Certification cycle (year) begins March 1st and ends on the last day of February the following year.

Exams are scheduled and announced annually by the Substation Operations Group.

11.1.1 Clearance Certification Requirements

To become certified to take Clearances and Hold Orders the employee must:

- Hold a valid Electrical Worker Permit.
- Possess knowledge of BPA's Switching and Clearance Procedure and the safety rules sections of the Accident Prevention Manual (APM)
- Pass the Clearance Certification exam

11.1.2 Clearance Certification Process

Once the person has met the minimum requirements to be Clearance Certified, they are eligible to take the exam.

Upon successful completion of the Clearance Certification Exam, Clearance Certification will be posted to the employee's Permit information on the Permit Directory.

11.1.3 Clearance Certification Exam Policy

The following requirements apply to all persons taking a Clearance Certification exam:

- All exams must be administered and graded by Test Administrators designated by the Manager of the Substation Operations Group
- Exams must be proctored and are closed book. (i.e., references, aids, etc. are not permitted to be used during exams)
- A person will have two opportunities to take and pass the Clearance Certification Exam. Failure of two exams will result in the failure to obtain and/or maintain Clearance Certification.
- 88% of questions must be answered correctly to be considered passing. Incorrectly answering any part of a question constitutes an incorrect answer for that question.
- Upon failure of an initial exam, a second opportunity (retake) may be given <u>no earlier than 14 days</u> from the date of the first failure.
- Upon failure of a second exam, the person's current Clearance Certification will be revoked.

When Clearance Certification is a condition of employment, an employee is eligible for a third (final) opportunity to take and pass an exam.

Refer to the exam policy for detailed information regarding the process for the third exam.

11.1.4 Exam Administration

The Manager of the Substation Operations Group may delegate the administration of the exams to others. The list of Approved Test Administrators is available on the TOZ SharePoint site.

First exams may be administered by any approved Test Administrator. A second exam (retake) shall only be administered by a Chief Substation Operator, Control Center Manager, or Substation Operations Group staff member designated as a Test Administrator. Third exams may only be administered by the Substation Operations Group.

If a person fails to follow the Test Administrator's instructions, or if the Test Administrator witnesses any portion of the testing policy being violated (i.e., cheating, photographing the exam, etc.) during the exam, the exam will be counted as a failure.

If an exam is administered prior to the person being eligible to take the exam, the exam will be considered void.

11.2 Certification of Non-Government Contractors (Non-CFTE)

Contractor Clearance Certification authorizes qualified contractors to receive Clearances and Hold Orders on high voltage lines for work outside of substations, and take Work Permits for relocation of fiber optic cable external to BPA energized substations.

Contractor Clearance Certification expires January 31st of each year.

11.2.1 Contractor Clearance Certification Requirements

The contracting company must document the work experience and training history of each contractor employee Lineman to be Clearance Certified in accordance with requirements in the contract. The work experience and training documentation along with CPR certification will be submitted to BPA's COR for approval and tracking.

Each contractor employee to be Clearance Certified is required to attend an annual Contractor Clearance Certification class on the Clearance, Hold Order, and Work Permit Procedure for Contractors.

11.2.2 Contractor Clearance Certification Exam Policy

Contractors will be given the opportunity to take the Contractor Clearance Certification Exam in accordance with the Contractor Clearance Certification Exam Policy, following the Contractor Clearance Certification class. Contractors, who choose to not take the exam following the class session, will need to make arrangements with the Substation Operations Group, TOZ.

In accordance with the Contractor Clearance Certification Exam Policy, an exam score of 88% is required to be considered passing. If any portion of an exam question is answered incorrectly, that question is missed. For example: if a multiple choice question has several correct responses and only one response is selected the question is missed. No partial credit will be given for exam questions. Contractors failing the exam will be allowed one opportunity to retake the exam. The second Contractor Clearance Certification Exam may be given immediately.

If a contractor fails the second exam, that contractor will not be allowed to apply for clearance certification for the remainder of that Contractor Clearance Certification cycle regardless of their work responsibilities. If the contractor has an existing Clearance Certification, it will be removed at the time the second exam is failed.

11.2.3 Clearance Certified Contractors (Non-CFTE)

The names of contractors that have completed the annual Contractor Clearance Certification class and have passed the Contractor Clearance Certification Exam will be placed on the Certified Contractor Directory. The Certified Contractor Directory is available to the BPA Dispatchers.

The contracting company shall immediately notify the Substation Operations Group, TOZ when a contractor that holds a current Contractor Clearance Certification is no longer employed by that contracting company. The Substation Operations Group will remove the employee's Contractor Clearance Certification. If the employee is rehired by another contracting company performing work for BPA, the contractor's Clearance Certification may be reinstated at the request of the contracting company, provided the request is made prior to the expiration of their current Clearance Certification.

11.3 Withdrawal of Clearance Certifications

Withdrawal of a BFTE Clearance Certification may be affected at any time by a responsible management official. A Contractor Clearance Certification may be removed by the Manager of the Substation Operations Group, TOZ.

Causes for withdrawal include, but are not limited to:

- Demonstrated lack of knowledge or unwillingness to follow safe work practices.
- Violation of established safety rules or procedures (see note below for Contractor Clearance Certification)

- Documented cases showing lack of sound and mature safety judgment
- Breach of substation security
- Involvement in an incident that resulted in an accident/incident being investigated by a BPA appointed Incident Assessment Team

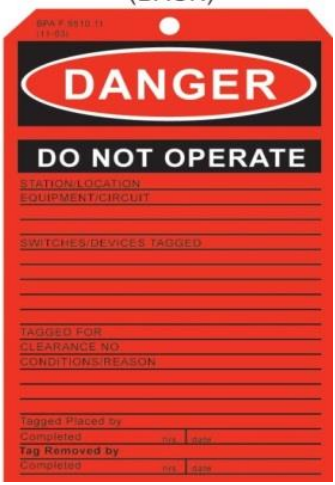
NOTE: A Contractor Clearance Certification may be removed for the violation of safety rules or procedures as defined by OSHA, the contract and/or the Clearance, Hold Order, and Work Permit Procedure for Contractors.

APPENDIX A - TAGS

DO NOT OPERATE TAG (BPA F 6510.11)

(FRONT)

(BACK)



HOLD ORDER TAG (BPA F 6510.28)

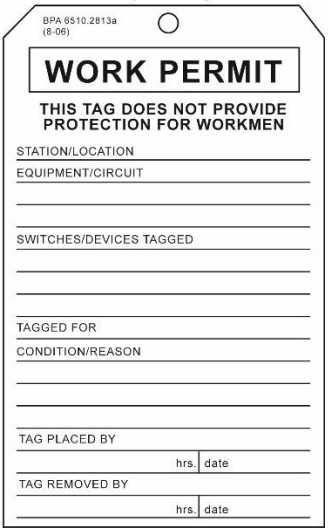
(FRONT)

(BACK)

WORK PERMIT TAG
(BPA F 6510.13a)

(FRONT)

(BACK)

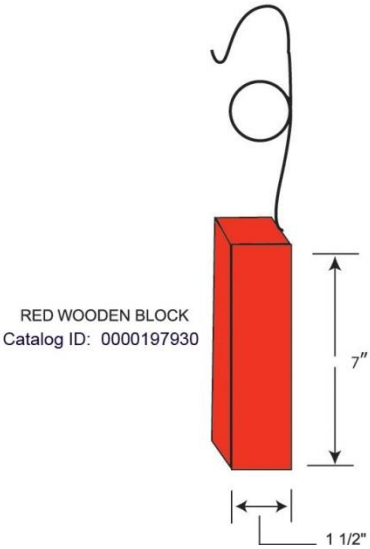


CAUTION TAG
(BPA F 6510.12)

(FRONT)

(BACK)

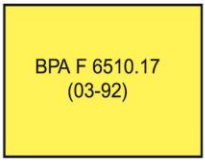
ELECTRICAL TEST MARKER
(BPA F 6510.40)



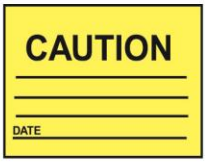
Red Do Not Operate Tag
with black border
(BPA F 6510.14)

Red Work Clearance Tag
(BPA F 6510.15)

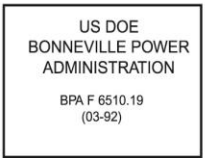
Blue Test Clearance Tag
(BPA F 6510.16)



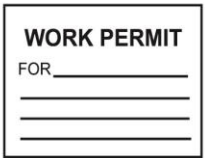
Yellow CautionTag
(BPA F 6510.17)



Yellow Hold Order Tag
(BPA F 6510.18)



White Work Permit Tag
(BPA F 6510.19)



APPENDIX B – CONTACTS

SUBSTATION OPERATIONS GROUP	
Substation Operations (General number)	360-418-2304
Substation Operations Group Manager	360-418-2585
Substation Operations Group Lead	360-418-2819
Energized Access/Permitting	360-418-2644

SAFETY STAFF	
Safety Organization main line – Vancouver	(360) 418-2397
Director of Field Safety	(360) 418-2585
Director of Construction Safety and contract oversight	(360) 418-8535
Director of Corporate Safety	(360) 418-2390
Eugene/Chemawa District Safety Manager	(541) 988-7404
Olympia/Longview District Safety Manager	(360) 570-4396
Tri-Cities District Safety Manager	(509) 544-4705
Redmond/The Dalles District Safety Manager	(541) 516-3228
Ross Complex Safety Manager	(360) 418-2373
Snohomish/Covington District Safety Manager	(360) 563-3695
Spokane/Wenatchee District Safety Manager	(509) 468-3105
Kalispell/Idaho Falls District Safety Manager	(406) 751-7814

CHIEF SUBSTATION OPERATORS

Alvey- Eugene District	(541) 988-7011	
Ashe-Tri-Cities District	(509) 546-5060	
Bell-Spokane District	(509) 468-3129	
Big Eddy-The Dalles District	(541) 296-5114	X134
Celilo-The Dalles District	(541) 296-3615	X133
Chemawa-Salem District	(503) 304-5912	
Covington-Covington District	(253) 638-3713	
Franklin-Tri-Cities District	(509) 542-5401	
Idaho Falls-Idaho Falls District	(208) 612-3160	
Kalispell-Kalispell District	(406) 751-7891	
Longview-Longview District	(360) 414-5611	
Malin-Redmond District	(541) 723-2325	
North Bend-Eugene District	(541) 751-4011	
McNary District	(541) 922-6812	
Olympia-Olympia District	(360) 570-4311	
Redmond-Redmond District	(541) 516-3211	
Ross-Longview District	(360) 418-2424	
Sickler-Wenatchee District	(509) 886-6015	
Snohomish-Snohomish District	(360) 563-3613	

APPENDIX C – SUMMARY OF CHANGES

Revision	Date Revised	Description of Changes Made	Reviewed-Approved By
1	10/10/2013	1. Section 3 – Added NERC CIP Site, project contractor, AMS reference. 2. Section 7 – Chief Operators are delegated to accept Energized Facilities Keys on behalf of the Substation Operations Group. Implement 5 day waiting period before replacement key issued. 3. Section 8– Added requirement for permitted personnel not having possession of their ID badge or proximity card to call AMS to sign in and out of AMS monitored facilities. Added escorting section. 4. Reformatted. Updated project contractor requirements to know the Contract Safety and Health Requirements. Added references to various NERC CIP documents.	J Vinson S Lovette
2	10/2014	1. Section 4 – Updated Permit Application requirements. Clarified reinstatement process. Added Permit and Clearance Certification Examination Policy to document. 2. Section 4.1.1 - Eliminated. 3. Section 5 – Updated Permit holder conduct and minimum requirements. Added First Aid Card requirement for Project Contractors. Updated Permit Application requirements. 4. Section 7 – Removed 24 hour key return requirement. Added temporary key issuance process. 5. Section 9 – Added insulator types. 6. Section 11 – Removed Restricted Clearance Certification. 7. Removed references of late key return violating NERC CIP 004, R4. Updated Substation Tour requirements.	J Vinson
3	4/2015	1. Section 4 – Added NERC CIP 004 Access Requirements. 2. Section 8 – Removed requirement to call Control Center when escorting at NERC CIP Site. Added escort briefings on voltage identification. 3. Updated Substation Tour requirements.	J Vinson
4	10/1/2015	1. Section 2 – Added policy statement regarding training Supplemental Labor.	J Vinson K Emerson

Revision	Date Revised	Description of Changes Made	Reviewed-Approved By
		2. Section 4 – Updated time period for temporary appointment permits. 120 day Permit Process. Updated Access Verification. 3. Sections 5 – Changed process for obtaining or renewing Permits. 4. Appendix E – Added Memorandum regarding Safety Training for Qualified SLMO Managed Contract Workers Requiring Access to Energized Facilities.	
5	11/15/2016	1. Section 3 – added PSP. 2. Section 4 – Revised to reflect new security requirement mandated by NERC CIP 004, R5. 3. Section 5 – Added requirement for Arc Flash, Lead Awareness and Asbestos Awareness training. Removed requirement for completion of DOL approved apprenticeship and added Journeyman rating in a high voltage electrical craft. 4. Section 8 – Added requirement for personnel unfamiliar with a substation to call District Operations prior to entry for information on known hazards. Updated Security Log requirements. Added SECON 1 reference. 5. Section 12 – Eliminated. 6. Whole Document – Revised wording of employee types. Updated policies and procedures.	J Vinson C Adams
6	6/15/2018	1. Section 3 - Revised definitions to match current standards and policies. Added definitions for CFTE, COR, Test Administrator. 2. Section 5 - Permit Requirements table relocated from section 4. 3. Section 6 - Revised to match BPA-WS-2-4. 4. Section 11 - Revised to match Exam policy and administration rules 5. Corrected typos and grammar with assist from field users. Revised throughout for better clarity and brevity. Removed Green Cross symbol from handbook cover. Thanks to those of you who shared your findings!	J Feeney K Emerson
7	7/20/2018	1. Reformatted	J Baker

Revision	Date Revised	Description of Changes Made	Reviewed-Approved By
8	9/25/19	1. Reviewed and made grammatically corrections. 2. Updated Substation Operating Log book Instructions. 3. Added "NOTE" to 4.5.2 Trainee section	L Stanger
9	5/14/2020	1. Updated/edited Appendix B – Contacts for Substation Operations Group. Removed list of names and added General office number, manager and lead as POC's for contact for external posting.	L Stanger

BONNEVILLE
POWER ADMINISTRATION

No job is so important and no service so urgent that we cannot take time to perform our work safely.

BONNEVILLE POWER ADMINISTRATION
Substation Operations Group

November 2019