



Procedures

MSC-PRO-EU-066

Electrical Utilities Lock and Tag Program

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Change Summary

Description of Change

Rev 4: Updated procedure references, clarified Clearance tag(s), clarified Hold Off tag(s) and improved wording on various procedural steps.

Publication correction #19595: Re-assigned Functional Manager

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1.0 PURPOSE

This procedure provides the methods Electrical Utilities (EU) uses to control electrical energy sources above 600 volts. It establishes the minimum safety requirements for locking and tagging equipment and systems to protect personnel and establishes a "cleared" working area.

This procedure also provides the methods required to interface with Electrical Utilities Lock and Tag Program and the various Hanford Contractor Lock/Tagout Programs.

2.0 SCOPE

This Level 2 Management Control Procedure applies to all Mission Support Alliance LLC (MSA) Team employees and MSA subcontractors performing high voltage electrical utility work, or personnel requiring energy isolation from the Hanford transmission and distribution system above 600 volts.

This document partially implements the ISMS Core Function # 3, Develop and Implement Hazard and Environmental Controls.

NOTE: Requirements are identified in [Appendix A](#). Terms specific to this document are defined in [Appendix B](#).

3.0 RESPONSIBILITIES

3.1 Electrical Utilities Manager

- Ensure a lock and tag program is established for Electrical Utilities.
- Appoint a qualified person or persons to be the electrical system dispatcher.
- Identify custodial boundaries as interface points.
- Conduct or delegate quarterly field surveillances of this lock and tag procedure.
- Ensure all personnel working within the scope of this procedure, including contractors, receive required training and follow this procedure.
- Maintain a log listing of all "current" clearance holders and keep a copy of the list in the dispatcher's office.

3.2 Electrical Utilities Supervisors

- Ensure Electrical Utilities line crew/maintenance personnel comply with this procedure.

3.3 Electrical System Dispatcher

- Administer all Electrical Utilities control locks and keys for use on Electrical Utilities equipment.
- Conduct all high voltage switching in accordance with procedure EU-PRO-OP-60777 (UE-A-22.04) "General Switching."

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- Issue and track all clearances, and the releasing of clearances on the high voltage transmission and distribution systems in the dispatcher's daily log.
- Verify the clearance holder's name is on the current holder's list prior to clearance issuance.
- Maintain the mimic board to reflect the status of all outstanding clearances.

3.4 Clearance Holder

- Perform assigned work activity within the boundaries of the clearance in accordance with EU-PRO-OP-60781 (UE-A-22.30), *Electrical Utilities Safety Program*.
- When work is being performed within the cleared work area, the clearance holder must be present. Should it become necessary for the clearance holder to leave the job, they shall relinquish their clearance to the dispatcher and a new clearance shall be taken by another qualified person.

4.0 INSTRUCTIONS

4.1 Establishing the Cleared Work Area Boundaries

Actionee	Step	Action
Prospective clearance holder	1.	Call the Electrical Utilities dispatcher via radio (Station 2) or phone (373-2321 or 373-2320) and request a switching order to establish the cleared work area. Predetermine the cleared work area boundaries during the work package development process.
Dispatcher	2.	Initiate a sequential switching order to configure the transmission and distribution system into the predetermined clear work area. Place a "Hold Off" tag(s) on all clearance boundary points The facility will open the disconnect/breaker to be used as a clearance boundary point(s). The Controlling Organization is not required to hang a DDNO tag as part of their "Hazardous Energy Control" program.

NOTE: *Switching conforms to procedure EU-PRO-OP-60777 (UE-A-22.04), General Switching, and only after all switching is complete is the clearance procedure initiated.*

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4.2 Initiating the Clearance

Actionee	Step	Action
Prospective clearance holder	1.	Request a switching order from the dispatcher to hang clearance tags.
Dispatcher	2.	After making certain the clearance holder is fully aware of the extent or the limits of his clearance, issue the prospective clearance holder the order to hang clearance tag(s).
Prospective clearance holder	3.	Verify all energy devices involved in the clearance boundaries have been opened, Hold Off tags installed on or near each clearance boundary point.
	4.	Hang clearance tag(s) and locks, where possible, and report back to the dispatcher.
	5.	Request a clearance on the cleared work area.
Dispatcher	6.	Issue the clearance holder the requested clearance after: <ul style="list-style-type: none"> • All necessary protective tags are applied and records are clear and complete. • Necessary lines or equipment are de-energized; verifying all energy isolating devices which could possibly energize the line or equipment in question have been opened, all phases checked open, the energy isolating devices tagged and, if possible, locked in the open position. • In cases where more than one person will require a clearance on a single cleared work area, notify outstanding clearance holders of the intent to issue multiple clearances on the same <u>cleared area</u>, for verification there will be no conflict of work activity. • In cases where a Controlling Organization will establish an overtag/lock on the common isolation boundaries, a notification will be given to all clearance holders of the intent to share the cleared work area.
Clearance holder	7.	Report back to the dispatcher verbatim the stated clearance and verify the scope of the clearance is understood.

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Actionee	Step	Action
Dispatcher	8.	Issues clearance holder a clearance.
Clearance holder	9.	Use electrical test equipment (e.g., meter) rated for the nominal voltage for a check to ensure the circuit is de-energized. Check the test equipment for proper operation immediately before and immediately after the test.
	10.	Apply grounds using an approved grounding method as stated in Section 3.23, "Grounding for the Protection of Employees" of EU-PRO-OP-60781 (UE-A-22.30), <i>Electrical Utilities Safety Program</i> .
	11.	After circuit has been checked de-energized and personal protective grounds applied, allow workers to begin work on cleared area.

NOTE: *When work is being performed within the cleared work area, the clearance holder must be present.*

4.3 Releasing Clearances for Equipment that is Returning to Service

Actionee	Step	Action
Clearance holder	1.	Prior to releasing clearance, notify all workers to clear the area and verify they have removed all protective grounds at this time.
	2.	Contact the dispatcher, give your name and inform the dispatcher that the work is complete. Request to have the clearance released.
Dispatcher	3.	Acknowledge the statement and let the clearance holder know it is OK to release the clearance.
Clearance holder	4.	Release the clearance to the dispatcher. Notify the dispatcher of the clearance number being release and the clearance boundaries. Inform the dispatcher of the following: <ul style="list-style-type: none"> • Grounds removed. • Workers & equipment in the clear. • Changes been made to this equipment (Yes or No). If yes, What? • This equipment is ready for service.

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Actionee	Step	Action
Dispatcher	5.	Acknowledge the clearance has been released by reading the released clearance statement back to the clearance holder
	6.	Verify the following via radio or telephone before issuing any switching order which will return equipment to service: <ul style="list-style-type: none"> • All grounding devices have been removed • All workers and equipment are in the clear. • Have changes been made and is this equipment? If yes, What? • Is the equipment ready for service?
	7.	Issue switching order(s) to remove all clearance tags and to return the system to the desired configuration (this may be performed by the clearance holder or delegate).

4.4 Releasing Clearances for Equipment *NOT* Returning to Service

Actionee	Step	Action
Clearance holder	1.	Prior to releasing clearance, notify all workers to clear the area and verify they have. Protective grounds may or may not be removed at this time.
	2.	Notify the dispatcher that the clearance is ready for release.
Dispatcher	3.	Acknowledge the statement, then let the clearance holder know it is OK to release the clearance.
Clearance holder	4.	Release the clearance to the dispatcher. Notify the dispatcher of the clearance number being release and the clearance boundaries. Inform the dispatcher of the following: <ul style="list-style-type: none"> • Grounds removed (Yes or No). • Workers & equipment ARE in the clear. • Changes been made to this equipment (Yes or No). • This equipment is NOT ready for service.
Dispatcher	5.	Acknowledge the clearance has been released by reading the released clearance statement back to the clearance holder

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Actionee	Step	Action
	6.	<p>Verify the following via radio or telephone before issuing any switching orders.</p> <ul style="list-style-type: none"> • All grounding devices have or have not been removed • All workers and equipment are in the clear. • Changes been made and is this equipment? (Yes or No) If yes, What? • This equipment is NOT ready for service.
	7.	After the clearance has been released, issue a switching order to remove all of the clearance tags.
	8.	After the clearance tags have been removed, leave remaining tags in place to maintain configuration control.

5.0 RECORD IDENTIFICATION

None.

6.0 SOURCES

6.1 Source Requirements

29 CFR 1910.269, OSHA Electric Power Generation, Transmission and Distribution
CRD O 422.1 (Supp Rev 0), *Conduct of Operations*

6.2 References

EU-PRO-OP-60777 (UE-A-22.04), Electrical Utilities Administrative Procedure, *General Switching*
EU-PRO-OP-60781 (UE-A-22.30), *Electrical Utilities Safety Program*
WAC 296-45, *Washington State Code for Electrical Workers*

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APPENDIX A. REQUIREMENTS

NOTE: When the term "clearance tag" is used in this procedure, it implies a lock shall be placed, where possible, in conjunction with the tag.

NOTE: For the tables in this section under the requirement "type" column, "V" means verbatim and "I" means interpreted.

A.1 General Requirements

#	REQUIREMENT	TYPE V or I	SOURCE
1.	Clearance isolating devices (e.g., switches, disconnectors) shall be clearance tagged and locked. Isolating Devices that cannot be locked (jumpers, pole mounted switches, cable elbows) shall be clearance tagged to ensure that the system cannot be used.	I	29 CFR 1910.269 (m)(3)(ii)
2.	Tag attachment devices shall be used that are one piece, all-environment cable ties with unlocking strength not less than 50 pounds. Metal devices shall not be used to attach tags.	I	29 CFR 1910.269 (d)(3)(ii)(D)
3.	If, because of design limitation or increased safety hazard, it is impossible to attach the Hold Off tag, clearance tag and lock exactly on the device, the tags shall be placed as near as possible to the device in a highly visible location (e.g., pole top switches, cables).	I	29 CFR 1910.269 (d)(6)(iv)(B)(2)
4.	Each Hold Off tag requires a verification of correct position of isolating device and tag placement.	I	CRD O 422.1, (Supp Rev 0)
5.	If more than one person requires clearance on the lines or parts of equipment, complete sets of clearance tags for each person requesting clearance shall be ordered.	I	29 CFR 1910.269 (m)(2)(viii)
6.	When two or more crews are engaged in work at any one location on account of emergency or for other reasons, the proper authority may designate one of the lead workers to act as lead worker of the combined crews for the purpose of obtaining clearances only.	I	29 CFR 1910.269 (m)(2)(ix)
7.	Electrical Utilities clearance lock is black in color. The locks are keyed alike. Sub-contractor clearance lock will be determined by the sub-contractor and will be known by the crew as the clearance lock. The color of the clearance lock cannot be green or red.	I	29 CFR 1910.269 (m)(3)(ii)

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A.2 Requirements for Requesting and Executing Clearances

1.	This procedure applies to clearances directly under the control of the electrical system dispatcher.	I	29 CFR 1910.269(m)
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A.3 Electrical Utilities Operations (EUO) Training Requirements

1.	To become a “current clearance holder”, training on this procedure is required.	I	29 CFR 1910.269 (d)(2)(vi)
2.	Successful completion of training on MSC-PRO-EU-066 does not necessarily constitute allowance to work on the T&D system. Supervision maintains responsibility for ensuring only qualified workers are considered for job assignments on the electrical T&D system.	I	29 CFR 1910.269 (a)(2)
3.	Retraining on this procedure shall be conducted and documented annually. A one-month grace period at the end of each year is allowed for retraining.	I	29 CFR 1910.269 (a)(2)(iii)

A.4 Requirements for Interfacing with other Groups

1.	When a requesting organization requires isolation of Electrical Utilities electrical equipment for the purpose of implementing their Controlling Organization’s energy control, the dispatcher will isolate incoming lines via a switching order to place a Hold Off Tag. After obtaining permission from the dispatcher, the requesting organization will install over the Hold Off tag the Controlling Organization's DDNO tag and/or the authorized worker's Danger tag. At the completion of the requesting organization’s work, the dispatcher will be notified that all overtag/locks have been removed.	I	29 CFR 1910.269 (m)(2)(i)
2.	If Electrical Utilities has a clearance in place and the facility is requesting isolation in order to perform work in an area adjacent to a high voltage clearance area, the common boundary isolation device(s) may be overtagged using the facility lock and tag procedure to establish the required lockout/tagout boundary. This provision only applies if the facility work area boundary does not extend into the high voltage clearance area.	I	29 CFR 1910.269(m)
3.	If a facility or sub-contractor needs to perform work at the same time as Electrical Utilities within an isolation boundary, then one of the options below will be used:	I	29 CFR 1910.269(m)

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	<ul style="list-style-type: none"> EU will release the high voltage electrical clearance and maintain the Hold Off tag. Facilities will install over the Hold Off tag the controlling organization's DDNO tag and/or the authorized worker's Danger tag, after obtaining permission from the dispatcher. 	I	29 CFR 1910.269 (m)(2)(v)
	<ul style="list-style-type: none"> The facility work will be performed by a composite crew of the facility and EU personnel under this lock and tag procedure, with the approval of the clearance holder. During activities that involve utility distribution work and secondary facility work within a common isolated boundary, at the discretion of the clearance holder and electrical system dispatcher, it will be permissible to allow Controlling Organization's to overtag the Hold Off tag on the isolation point(s). Clearance and CO overtag/lock can be established / removed independent of one another. 	I	29 CFR 1910.269 (m)(2)(viii)
4.	When Electrical Utilities requires isolation of facility equipment for the purpose of establishing a working clearance boundary, the appropriate facility will open the facility disconnect/breaker for Electrical Utilities. Electrical Utilities will install a Hold Off tag on the facility open disconnect/breaker, then install a Clearance tag and lock. The facility may elect to install a Controlling Organization DDNO tag on the open disconnect/breaker prior to Electrical Utilities installing the Hold Off & Clearance tags.	I	29 CFR 1910.269 (m)(2) (iv)
5.	It is permissible to tag off-site switches for the dispatcher and issue clearances against this tag. In tagging out inter-utility tie lines, the open switches on the foreign end of the line shall be tagged for the foreign dispatcher requesting the outage. The foreign dispatcher will issue clearances to individuals in their organization against this tag.	I	29 CFR 1910.269(m)
6.	When Electrical Utilities requires switching on a Bonneville Power Administration (BPA) or inter-utility interface device, the appropriate utility will place their tags on the interface device and issue a terminal clearance at the request of the EU dispatcher.	I	29 CFR 1910.269(m)
7.	When BPA requires isolation on electrical equipment for the purpose of implementing their facility lock and tag, the dispatcher will issue a terminal clearance on the energy isolating device.	I	29 CFR 1910.269(m)

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APPENDIX B. DEFINITIONS

Bonneville Power Administration (BPA) System Dispatcher: A BPA employee responsible for directing the operation of the BPA electrical system, which supplies the Hanford electrical system.

Boundary: The limits of clearance determined by the energy isolating devices configured to provide a de-energized work area.

Clearance Holder: The qualified individual to whom the electrical system dispatcher has granted a clearance.

Clearance Lockout Device: A device that permits multiple locks to be placed on a specific energy isolating device.

Clearance: Certification from the electrical dispatcher that a specified line, line section, or piece of equipment is de-energized, that the proper precautionary measures have been taken and the line or equipment is being turned over to an employee for work until such time when he releases the clearance to the electrical dispatcher.

Cleared Area: A section of the electrical system isolated within the boundaries specified by a clearance.

Energy Isolating Device: Physical device, such as a circuit breaker, switch or fuse which is capable of electrically disconnecting specific equipment or a section of circuitry from any source of electrical energy.

Qualified Individual: One who is familiar with the construction, configuration, or operation, of lines or equipment related to his responsibilities; and who is fully aware, through training and experience, of the related hazards. An employee who is receiving on-the-job training, and has demonstrated the ability to perform duties safely at his/her level of training shall be considered qualified for those duties while under direct supervision of a "qualified person."

Status: Electrical configuration or operational position of an energy isolating device.

Switching Orders: The documentation issued by the electrical system dispatcher, and received by the switchman, for the purpose of operating energy isolating devices and the placement or removal of locks and tags.

Tag – Clearance: Clearance tags are used by the clearance holder to identify clearance boundaries, for the purpose of alerting employees that the circuit, system, or equipment is being worked on. See [Appendix C](#).

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Tag - Danger Do Not Operate: "Danger - Do Not Operate" tags are used by various facilities for configuration control in accordance with the site lock and tag program.

Tag - Hold Off: EU "Hold Off" tags are used by EU for configuration control to establish protective boundaries, and are always placed in position prior to a working clearance. See [Appendix D](#).

Terminal clearance: Certification by the electrical system dispatcher from the BPA dispatcher that an energy isolating device(s) has been placed in the open position, and shall remain open, with a dispatchers Hold Off tag in place until the terminal clearance has been released to the appropriate dispatcher.

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APPENDIX C. CLEARANCE TAG INFORMATION

1. CLEARANCE # / the number of the clearance as issued by the dispatcher.
2. NAME OF SWITCH/DEVICE / Name of switch or device.
3. CLEARANCE HOLDER / the name of the person receiving the clearance and hanging this clearance tag.
4. CHECK OPEN / Mark the Check Open box.
5. DATE / Date as stated by the dispatcher during the switching order.
6. TIME / Time as stated by the dispatcher during the switching order.
7. DISPATCHER ISSUING CLEARANCE / Print the name of the dispatcher who issues the clearance.

NOTE: *BT-6001-786R (REV 1), BT-6006-949R (REV 0), BT-6006-950R (REV 0) and BT-6006-951R (REV 0) are clearance tags. Use the appropriate clearance tag to match isolation device.*

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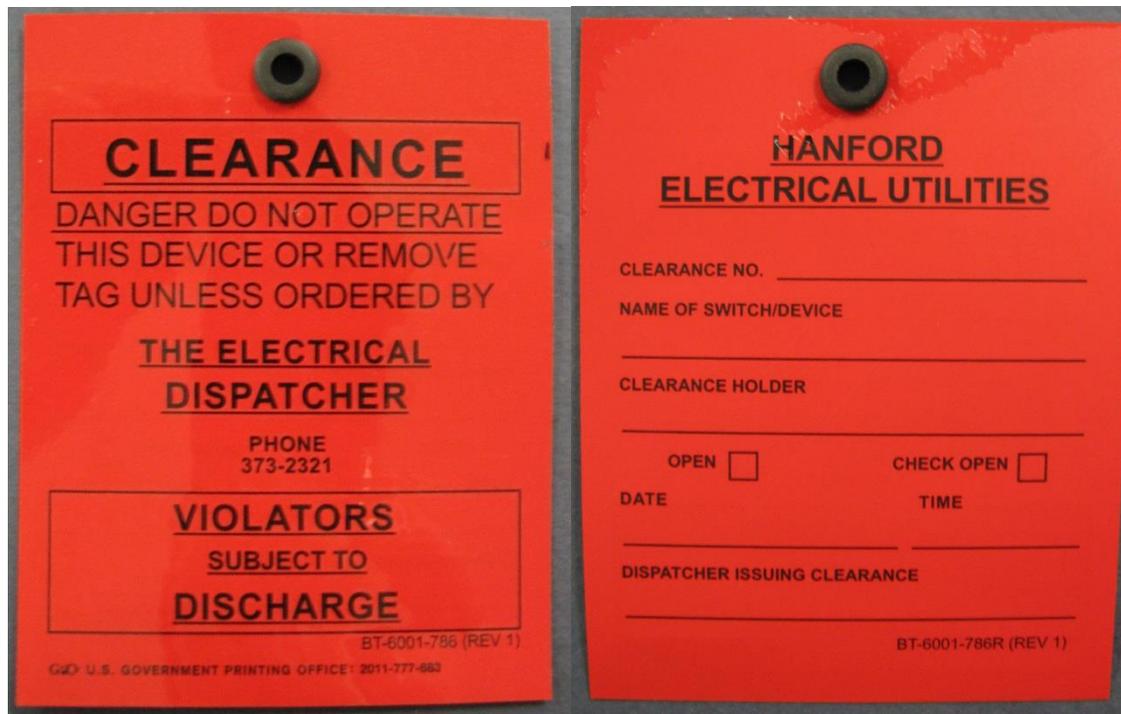


Figure 1. Example Clearance Tag

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APPENDIX D. HOLD OFF TAG INFORMATION

1. **S.O. No.** / switching order number as issued by the dispatcher.
2. **FULL SWITCH DESIGNATION** / Name of switch or device.
3. **Dispatcher Ordering Switching** / Name of dispatcher ordering switching.
4. **Time** / Time as stated by the dispatcher during the switching order.
5. **Date** / Date as stated by the dispatcher during the switching order.
6. **Switched By** / Name of the person who opened the switch or device.
7. **Verified By** / The name of the verifier.

NOTE: *BT-60010785R (11/95), BT-6006-946 (REV 0), BT-6006-947 (REV 0) and BT-6006-948 (REV 0) are Hold Off tags. Use the appropriate Hold Off tag to match the isolating device.*

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Figure 2. Example Hold Off Tag