

 <p>BOISE STATE UNIVERSITY ENVIRONMENTAL HEALTH, SAFETY AND SUSTAINABILITY</p>	<p>Energy Isolation Program Idaho Division of Building Safety General Health and Safety Standards 150 OSHA 1910.1030</p> <p>Revision, March 12, 2014</p>
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Statement of Program -

This program applies to all departments and contractors working on the Boise State campus where an unexpected release of energy to any equipment could cause an injury. This program applies to those employees who are authorized to lockout and tagout equipment, those employees who are affected by the locking out of equipment, and those contractors who may need to lockout equipment while completing work on the Boise State University campus.

All equipment being locked out will be test started or verified prior to any work beginning. This will confirm that the device has been isolated from the energy sources.

Definitions:

Affected – Those employees who work in an area where servicing equipment is being conducted.

Authorized - Those employees who work on equipment requiring energy isolation prior to maintenance activities initiating.

Energized - connected to an energy source or containing residual or stored energy.

Energy Isolating Device - a mechanical device that physically prevents the transmission or release of energy, including but not limited to the following:

- Manually operated electrical circuit breaker

- Disconnect switch

- Manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and, in addition, no pole can be operated independently

- A line valve

- A block or any similar device used to block or isolate energy

Energy Source is any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Lockout is the placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout Device is a device that utilizes a positive means such as a lock, a key type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment.

Protective Materials and Hardware are locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware provided by the employer for isolating, securing, or blocking of machines or equipment from energy sources.

Qualified Person is a person familiar with the construction, operation, and safety requirements of the equipment and the hazards involved.

Servicing and/or Maintenance is workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or un-jamming of machines or equipment, and making adjustments or tool changes where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

Setting Up is any work performed to prepare a machine or equipment to perform its normal production operation.

Spill is any unintentional release of electrolyte.

Tagout is the placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout Device is a prominent warning device, such as a tag and a substantial means of attachment, which can be securely fastened to an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Assigning Locks –

Each person involved in a LOTO process should be issued personal locks, keys and lockout devices appropriate to his or her needs. Management should keep records of lock assignments, including the person's name and lock number.

- The individual's name (or other clear identification) must be stamped or labeled on each lock
- No one other than the lock holder may have a key to that lock.
- Under no circumstances should locks be loaned or borrowed.
- Only the individual that places a lock may later remove it unless the lock is left on and the lock removal procedure is followed.
- Employees must notify a supervisor of any lost locks so they can be replaced immediately
- Locks used for lockouts may not be used for other purposes such as locking toolboxes or lockers.

Training and Education –

OSHA and the State of Idaho require that all employees who are affected by energy isolation and those conducting energy isolation be trained in the Energy Isolation program. A review of this training is conducted annually. Retraining on the procedure is conducted if deficiencies are noted with employees when conducting lockout tagout procedures or when inadequacies are noted during the annual evaluation.

Cord and Plug Applications -

Lockout tagout rules do not apply to cord and plug applications where equipment can be de-energized by removing the plug from the outlet. In these instances, so long as the end of the cord is within control of the individual conducting work, you do not need to block out the device. If an individual leaves, or the cord is not within their physical control, the cord must be locked out. Use a canister device to place the end of the cord into and apply your lock to the canister until the maintenance activity is complete.

Lockout – Energy Isolation Audit/Evaluation -

The Energy Isolation program will be evaluated regularly. All processes requiring a lockout will need to be included in the evaluation. The form required for this procedure is included following this document. The person conducting the evaluation cannot be the person completing the maintenance activity requiring the lockout. For energy control procedures used less frequently than once per year, evaluating this procedure will only be done at the time of maintenance. If any deviations are noted during the evaluation they will be immediately rectified and re-training for those employees affected will be completed in a timely manner. Each authorized employee will go through the review process to ensure the policy is being followed. The inspection must be certified or signed by the person conducting the inspection. It must identify the machine or equipment being evaluated, the date and those employees involved in the evaluation. (I do have an audit form)

Shop Locks

Shop locks are used by the maintenance department. These locks are “black – insert color here”, they are keyed alike and are kept in the LOTO center located in the electrical shop. Each lock has its own key kept in the LOTO center. These locks are to be used to protect equipment only. The person who applies or removes the lock assumes full responsibility for that action and the equipment. If you use a black shop lock you must use a tag that identifies why the equipment is being locked out, the date, and the responsible person taking the equipment out of service. If maintenance is going to be completed on a piece of equipment that is locked out with a shop lock their personal lock must also be applied. Personal locks should not be used to protect equipment. Personal locks should only be used for maintenance activities when individuals are protecting themselves from hazardous energy.

Transfer of Ownership

If work continues over night and there is no Transfer of Ownership of the work from one individual to another, a personal lock may be kept on until the work is completed. If there is a Transfer of Ownership, personal locks need to be removed, and shop locks placed on until the new owner adds their personal locks and the work is completed.

Contractors

It is our responsibility to inform contractors about the equipment or task in which they will be working and that it will require compliance to the electrical safety program. Their program must comply with the Idaho Division of Building Safety General Health and Safety Standards 150 and OSHA 1910.1030.

Contractors working on electrical equipment must be trained to this standard prior to coming to Boise State to perform work. The Contractor may be asked to provide a copy of their written electrical safety program and documentation of training for the people working on electrical systems. Some contractors may be prepared and bring their own locks and tags for locking out equipment. If this does not occur, contractor locks may be provided for contractors to borrow

while working on campus. At the conclusion of work, the Boise State representative will debrief with the contractor to note if any hazards were confronted or created during their work.

Minor Maintenance for Test/Jog

Sometimes it is necessary to “jog” or “inch” a machine to move parts for minor tool changes, adjustments or maintenance. Clear the machine or equipment of tools and materials. Remove people from the machine or equipment area. Remove the lockout devices and energize the process for testing. After activities have commenced, de-energize all systems and reapply energy control measures according to procedure.

Energy Isolation Procedures –

- Shut down the equipment at the point of operation
- Don appropriate electrical PPE for the task remember, no synthetic clothing
- Isolate all sources of stored energy including but not limited to: electrical, mechanical, hydraulic, pneumatic, chemical, thermal or steam
- De-energize the main electrical power supply
- Disconnect batteries
- Blank off process material flow (preferred method); or use either double block valves, bleeds, and a lock or single block valves, bleeds and a lock (alternative methods)
- Block or bleed hydraulic, pneumatic or steam activated components
- Render harmless other forms of stored energy such as counterweights, springs or flywheels. Examples may include pinning or blocking in position.
- Place your identified personal lock, or a lock and signed tag on the de-energized equipment or devices. There should be one lock for each person working. If there are several sources of energy that need to be locked out you may have to place more than one lock.
- Tags will be required to be used if the lock does not indicate the employees name. The tag must have the employee’s name, date and what equipment is being worked on.
- Always use a hasp on the initial lock out, this will allow others to add their locks. Keep the 6th hole free to add an additional hasp in the event more than 6 people are working on the equipment.
- Test by activating the start button to ensure that it is in fact locked out and cannot be operated.
- When the work is complete the area must be cleared of all tools and all individuals working in the area must be clear of any moving parts prior to start up.
- Each person who applied a lock must individually remove their lock.
- If a lock remains, and that person is not available to remove their lock, please follow the lock removal portion of this program.
- When all locks have been successfully removed, and you have verified that the area is clear, all tools have been removed and all guards if applicable have been replaced, the equipment may be energized.
- Locks and keys may be stored on a board or in individuals tool boxes. Keys must be under the control of the owner of the lock at all times. If a lock is in use, the key must be in a pocket or with the owner.

Safe LOTO Practices

- In installations with 600 volts or higher, only a qualified and authorized person is permitted to shut down the main disconnect switch. The first person to put his or her lock on the high voltage disconnect switch must be present when the electrician shuts it down.
- Never pull a main disconnect switch while it is under load. This could cause arcing or an explosion.
- Tags must have a non-reusable attachment device like a zip tie, and it must require more than 50 pounds of unlocking strength to remove.
- Lock boxes may be used to lock out systems where multiple locks are required to isolate the system.

Forcible Removal of a Lock

Under normal circumstances, a lock must never be removed by anyone except the person whose name appears on the lock. Some emergency situations, however, may require forcible removal of a lock.

If you need to remove a lock you must:

- Notify the supervisor that a lock has been left on a disconnect
- Obtain a lock removal form from your supervisor
- Contact the owner of the lock that you intend to remove
- Ensure the person has left the facility, and that the equipment is ready to be started
- Fill out the removal form and turn it back to your supervisor

Two designated people must: (The Supervisor and a representative from EHS&S)

- Personally check the locked out equipment
- Verify that everyone is clear
- Confirm that the work has been completed
- Verify that the equipment is ready to be energized

The supervisor may then authorize the removal of the lock using specific procedures developed for emergency situations. Note: In no case should less than two designated individuals make the decision to remove another person's lock. Before the employee whose lock was removed resume work, the supervisor must notify them that their lock was forcibly removed.

Note: Violation of this program and working on energized equipment will invoke disciplinary actions up to and including termination.