

Idaho State UNIVERSITY

Technical Safety Office

921 South 8th Avenue, Stop 8106 · Pocatello, Idaho 83209-8106

Hazardous Energy Control (Lockout/Tagout) Program

An Environmental Health & Safety Document



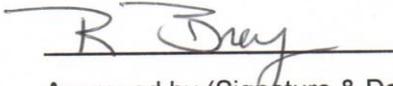
Prepared by (Signature & Date)

Clark H. Weaver, CSP, CIH, CHMM



Reviewed by (Signature & Date)

Nancy Fox, CIH, MSPH



Approved by (Signature & Date)

Richard Brey, Ph.D., CHP

AVP Academic Operations & Safety

AVP Academic Operations & Safety

March 2017

Table of Contents

I. PURPOSE	3
II. SCOPE	3
III. RESPONSIBILITIES	3
IV. PROGRAM ELEMENTS	4
A. DESCRIPTION	4
B. BACKGROUND	4
C. EQUIPMENT INVENTORY	5
D. ASSIGNING LOCKS	5
E. PROCEDURES	5
F. REMOVAL OF LOCKS	7
1. End of the Job/Completion of a Shift.....	7
2. End of Service or Repair.....	7
G. PERSONNEL TRAINING	7
1. Authorized Employees	8
2. Affected Employees	8
3. Other Employees	8
4. Tag-out.....	8
V. PROGRAM EVALUATION	9
VI. DEFINITIONS	9
VII. APPENDICES	11

Appendix A: Authorized Employees

Appendix B: Affected Employees

Appendix C: Equipment Inventory

Appendix D: Equipment Specific/Equivalent Protection lockout/tag-out Procedures

Appendix E: Training Sign-in Sheet

Appendix F: State Regulations

Appendix G: Annual Evaluation

PURPOSE

The purpose of this program is to establish Lockout/Tagout procedures to prevent the unintended release of stored energy, which may energize a machine or equipment, causing injury to an employee. It is used to ensure that ISU employees performing any service or maintenance activities shall be protected from energy related potential hazards.

I. SCOPE

The hazardous energy control/lockout/tagout program applies to all ISU academic, research and service units with full-time, part-time, permanent, temporary or student employees who work with hazardous energy. This includes the installation, repair, operation, adjustment or service of machinery, equipment or circuits with electrical, mechanical, hydraulic, pneumatic or chemical energy, radiation generating devices, thermal energy, potential energy (springs, compressed gases, suspended objects), potential release of hazardous material (contaminated fluids, etc.) or other hazardous energy requiring energy isolation.

Justification: Lockout/tag-out procedures (section 12, of Idaho DBS Standard 150) require that the employer shall establish a written program consisting of energy control procedures, personnel training, and periodic inspections to ensure that, before any personnel perform any servicing or maintenance on a machine, equipment, or circuits where the unexpected energizing, start up, or release of stored energy could occur and cause injury, the machine, equipment, or circuit is isolated from the energy source and rendered inoperative. Division of Building Safety, General Health and Safety Standards, Electrical Safety Standard.

II. RESPONSIBILITIES

- A. The Technical Safety Office (TSO) is the ISU environmental health and safety entity responsible for the establishment, implementation, and review of this ISU program.
- B. Supervisors and managers with work that requires hazardous energy control have responsibilities per the ISU Safety Policy, and per DBS Section 150 are also expected to identify employees requiring specialized training to safely complete the tasks relative to this program document and associated procedures.
- C. Employees -All ISU employees are required to comply with this program document and the associated procedures. Any concerns related to hazardous energy safety should be reported to a supervisor or the Technical Safety Office. Employees which authorize or order the use of contractor work around hazardous energy on campus are responsible to inform the contractors of the above ISU requirement, and arrange to ensure affected ISU staff and faculty are notified in advance
- D. Contractors working on campus are required to have their own lockout/tagout programs. The contractor is responsible for supplying their own locks and tags.

III. PROGRAM ELEMENTS

- A. Description: Before work is performed on equipment, systems or machines, the sources of hazardous energy must be identified. These sources of hazardous energy may include; electrical, mechanical, hydraulic, pneumatic, chemical, thermal, steam, water and gravity. The ISU hazardous energy control/lockout/tagout program is designed to prevent injury to employees who are servicing or maintaining machines, equipment or systems from the unexpected energization, startup or release of stored energy. Before a lockout device is placed, the work shall be approved by a lockout authority (this could be by a local task procedure approved by a lockout authority), and affected employees informed of the lockout/tagout. A lockout device is used to form a physical boundary between the equipment, machine or system and its energy source. Tags should also be used in conjunction with a lockout device.

The Idaho Division of Building Safety Lockout-Tagout Procedures Section 12, of standard 150 (Electrical Safety) is applicable to all Idaho State Buildings. BACKGROUND: Before work is performed on equipment, systems or machines, the sources of hazardous energy must be identified. These sources of hazardous energy may include; electrical, mechanical, hydraulic, pneumatic, chemical, thermal, steam, water and gravity. The ISU hazardous energy control/lockout/tagout program is designed to prevent injury to employees who are servicing or maintaining machines, equipment or systems from the unexpected energization, startup or release of stored energy. Before a lockout device is placed, the work shall be approved by a lockout authority (this could be in the form of a local task procedure approved by a lockout authority), and affected employees informed of the lockout/tagout. A lockout device is used to form a physical boundary between the equipment, machine or system and its energy source. Tags should also be used in conjunction with a lockout device.

- B. The terms equipment, machine and systems are used to broadly represent a wide variety of items on campus and are used throughout the hazardous energy control/lockout/tagout program interchangeably. Examples of equipment, machines and systems that would be covered under this policy include, but are not limited to; air handlers, condensate, steam or sewer lines, elevators, presses, drills, saws, autoclaves, LASERs, fans, motors, printing presses, and generators.

Work on energized circuits is covered under other ISU Electrical Safety Programs. This program does not apply to work conducted on high voltage systems (greater than 600 volts). The hazardous energy control/lockout/tagout program does not apply to equipment with a cord that cannot be unplugged provided that the plug is in control of the person performing the work. If the cord cannot be controlled by the person performing the work, a canister device and lock should be placed on the cord.

Lockout is the preferred method of energy isolation where a lock is used to isolate and maintain the energy isolating device in the locked position. Tags can only be used when a

lock cannot be applied and control measures are in-place that offer an equivalent level of protection as would be afforded by the use of a lockout device. Appendix E outlines complex/equipment specific lock-out/tag-out procedures and their method of equivalent protection. Management should have copies of their respective procedures available to employees within their Department.

All new equipment installed on an Idaho State University campus should be installed with lockout capability.

C. EQUIPMENT INVENTORY

Management is responsible for keeping a current inventory of machines, equipment or systems subject to the hazardous energy control- lockout/tagout program. When there are changes in machines, equipment or systems (including equipment addition or decommissioning), management is responsible for updating their local Appendix C, and providing a copy to the TSO.

D. ASSIGNING LOCKS:

All authorized employees (see definition) involved in the lockout/tagout program shall be issued personal locks, keys and lockout devices. A record of all authorized employees and their assigned locks is maintained in Appendix A.

Management is responsible for submitting updated information to the Technical Safety Office upon hire, promotion or termination.

- The authorized work must be identifiable on each lock, such as the unique initials or name of the authorized employee stamped or labeled on their personal lock
- The key for the lock is issued only to the authorized employee
- Locks cannot be borrowed or shared
- Locks are designated only for the lockout/tagout program and should not be used for other purposes.

E. PROCEDURES

The standard procedure applies to equipment or machinery with one energy source and no potential for stored or residual energy, otherwise a specific procedure is required. The following additional conditions must be met when using the standards procedure:

- There is no potential for the accumulation of stored or residual energy after shut down which could injure employees
- There is a single energy source that can be easily identified and isolated. The isolation will completely lock out the equipment and render it inoperable.

- The machine is isolated from the energy source and locked out during service/maintenance
- A single device will achieve a "locked out condition"
- Maintenance or service does not create hazards for other employees
- Incidents involving the re-energization or unexpected activation of equipment during service or maintenance have not occurred.

Standard procedure

- (1) Review the type and magnitude of the energy that the machine or equipment utilizes. Determine related hazards. If the equipment has more than one energy source or stored energy, a copy of the specific written lockout/tagout procedure can be obtained from your supervisor or found in Appendix D. Note: the review may also include discussions with the equipment operator.
- (2) Notify affected employees that the equipment or machine will be locked or tagged out and the reason for the lockout or tagout.
- (3) If the equipment or machine is currently operating, shut it down by utilizing standard shut down procedures.
- (4) Identify the energy isolating device to isolate the equipment from its energy source.
- (5) Each authorized employee performing work on the equipment should verify that the equipment has been shut down.
- (6) Each authorized employee who will perform contact work on the job, shall place their lock on the energy isolating device (this does not include those do not make personal contact with the equipment, but are present to support the effort). The lock/tag must include the employee's name, department and phone number. No employee shall begin contact work on the equipment without installing their personal lock nor should any employee place a lock for another employee. No lock should be used without a tag and any mechanism that can be locked must be locked (a tag and tie is not acceptable, except in a locked utility space that the locked access door indicates authorized access only, and key control is limited to authorized employees). Lathe equipment or machines which cannot accept a lock, a specific tagout procedure should be followed (see Appendix D). Each authorized employee performing contact work on the equipment shall confirm that under normal operating conditions the equipment will not start or release stored energy.
- (7) All electrical connections shall be treated as energized and employees shall wear appropriate PPE until the equipment is tested and verified to be de-energized. Once this is completed, repair work, service or maintenance can commence.

Procedures Involving More than One Person: If during the proceeding procedure, more than one person is required to lockout the equipment, each person shall place their own assigned lockout device on the energy isolating device. If the equipment cannot accept multiple locks, a hasp must be used. An alternative measure would be to use one lock and a lockout box. A single lock is placed on the machine and the key is placed in a lockout box or cabinet with multiple locks

securing it. Each employee must use their assigned lock to secure the box or cabinet. No attempts to reenergize equipment shall be made until all employees remove their locks.

If the equipment or machine has more than one energy source, residual stored energy refer or does not meet the criteria outlined above, refer to the equipment specific procedures in Appendix D. If equipment or a machine does not have a specific procedure listed in Appendix D, then a equipment specific procedure is developed by one or more Authorized Employees, approved by the supervisor/manager over the authorized persons, and copy submitted to the TSO. The specific procedure is then added to Appendix D of the local and ISU wide program document, and is applicable only to that specific equipment. To prevent work delays, specific procedures for lockout/tag-out should be developed in advance to routine work or emergent needs.

F. REMOVAL OF LOCKS

1. *End of the Job/Completion of a Shift*

Each authorized user shall remove their own lock and cannot remove the lock/tag of another person. In the event of a shift change (only with hand-over of duties to the replacement), the person completing their shift shall remove their lock and the person replacing them on the subsequent shift shall place their lock and verify that equipment is shut down and energized.

2. *End of Service or Repair*

If a lock remains on an energy isolating device and the employee is no longer on campus, they may be called by their supervisor to determine if they can return to campus. If the employee cannot be reached, the only person who can remove their lock is the Senior Authorized Employee or the employee 's Direct Supervisor. The Senior Authorized Employee or Direct Supervisor must determine that the employee is no longer at work, cannot return and has completed the service or repair. After this verification, the lock can be cut and removed. The person removing the lock must sign and date the lock. The Senior Authorized Employee or the direct supervisor of the employee whose lock was removed should meet with the employee on their return and review the lockout/tagout policy, procedures and guidelines.

After removing the lockout or tagout devices but before reenergizing the machine, the authorized employee must assure that all employees who operate or work with the machine, as well as those in the area where service or maintenance is performed, know that the devices have been removed and that the machine is capable of being reenergized.

Under no circumstance should any employee other than the Senior Authorized Employee or the direct supervisor remove another employee's lock.

G. PERSONNEL TRAINING:

Authorized, affected and other employees shall be trained in the knowledge and skills required for the safe application, usage, and removal of the energy controls that are acquired by employees. The training upon a change in job assignments, a change in equipment that presents a new hazard, a change in energy control procedures, as a result of the annual evaluation/periodic inspections, periodically or when the Technical Safety Office deems there are inadequacies in the

way the program is being implemented. Training should be documented through the use of a sign-in sheet (available in Appendix F) with instructor signature to certify the training. Employees shall receive a copy of the training presentation and a copy of the regulations (Appendix G). An examination should be administered to the employees attending the training and can be acquired from the Technical Safety Office. Supervisors/Directors are responsible for ensuring that training is administered to the necessary employees. Once training is completed, a copy of the sign-in sheets and examinations shall be submitted electronically to the Technical Safety Office. The Technical Safety Office will prepare certificates for employees that have successfully completed the training.

1. Authorized Employees

Training for authorized employees should be coordinated provided annually by the Senior Authorized Employee.

This training shall be conducted in person and will include practical training on hazardous energy sources, type and magnitude of energy available and the means/methods to control or isolate this energy. New or transfer authorized employees shall receive in person training within 30 days of hire or transfer.

2. Affected Employees:

Affected employees who operate or work with the machine, and employees in the area where job tasks require them to be in the area where service or maintenance is performed. These employees do not service or maintain machinery or perform lockout/tagout activities.

Affected employees must receive training in the purpose and use of energy-control procedures within 30 days of hire or transfer. Affected employees also need to be able to recognize when the energy-control procedure is being used. Supervisors are responsible for identifying whether an employee is affected based on them operating hazardous energy sources or being in the area of hazardous energy sources. Position titles of affected employees are documented in Appendix B. This training (including digital training) shall be coordinated/presented by the Senior Authorized Employee or Safety professional, and should cover an overview of this policy and the associated procedures and the purpose and use of energy control procedures.

3. Other Employees

Other employees shall receive training in their respective areas that outlines what energy control procedures may be utilized, and the prohibition relating to restarting, reenergizing or removing a lock or tag on equipment, machines or systems.

4. The conduct of tag-outs is an exception, only permitted in a locked utility space when the locked access door indicates authorized access only, and key control is limited to authorized employees.
 - When tagout systems are used, employees shall also be trained in the following limitations of tags: tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint on those devices that is provided by a lock;
 - When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated;
 - Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area,
 - In order to be effective tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace;
 - Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program;
 - Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

IV. PROGRAM EVALUATION

An evaluation of the lockout/tagout program will be performed annually or sooner when questions of efficacy emerge. The evaluation will be facilitated by the Technical Safety Office. During this evaluation, the safety professionals will review the policy, procedures and any injuries that may have resulted from the lockout/tagout program. Program evaluation are documented in Appendix H. The results of the annual evaluation may dictate additional inspections, program modifications or policy changes.

V. DEFINITIONS

Affected Employee: An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Authorized Employee: An employee whose work duties includes placing locks and tags or implements a lockout tagout procedure on equipment or systems to perform servicing or maintenance.

Other employees: All employees who are or may be in an area where energy control procedures may be utilized

Energized: Connected to an energy source or containing residual stored energy.

Energy-isolating device: A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker, a disconnect switch, a 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, and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy isolating devices

Energy Source: Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy source.

Extension Cord or Cord Set: A portable flexible electric cord of any length which has one male connector on one end and one or more female connectors on the other end and has no built in over-current protection.

Flexible Cord: Is a multi-conductor flexible sheathed cable which is used for extension cords, as the connection means for appliances, and for permanent use by connecting pieces of equipment or devices to each other or to the premises wiring system where flexibility or portability is required.

Ground: Is an electrical conducting connection, whether intentional or accidental, between an electrical circuit or equipment and the earth, or some conducting body that serves in the place of the earth.

Lockout: 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: Any device that uses positive means, such as a lock, blank flanges and bolted slip blinds, to hold an energy-isolating device in a safe position, thereby preventing the energizing of machinery or equipment. Never remove a lockout that does not belong to you.

Normal production operations: Utilization of a machine or equipment to perform its intended production function.

Servicing and/or maintenance: Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, maintaining and/or servicing machines or equipment, including lubrication, cleaning or unjamming of machines or equipment, and making adjustments or tool changes, where employees could be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

Tagout: 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: Any prominent warning device, such as a tag and a means of attachment that can be securely fastened to an energy-isolating device to indicate that the machine or equipment to which it is attached may not be operated until the tagout device is removed. Never remove a tagout that does not belong to you.

VI. APPENDICES

Appendix A: Authorized Employees

Appendix B: Affected Employees

Appendix C: Equipment Inventory

Appendix D: Equipment Specific/Equivalent Protection lockout/tag-out Procedures

Appendix E: Training Sign-in Sheet

Appendix F: State Regulations

Appendix G: Annual Evaluation

Appendix D: Equipment Specific/Equivalent Protection Procedures

The following coding will be used for Lockout Procedures LO-P-Building#-Room#

Equipment Specific Lockout/Tagout Procedure

Department/Division: _____ Last Updated: _____

Type of Equipment: _____

Location: _____ ID# (if applicable): _____

Work to be performed: _____

Employee(s) authorized perform this work: _____

Purpose: This procedure establishes the minimum requirements for the lockout/tagout of energy-isolating devices whenever maintenance or servicing is done on the machine or equipment listed above. It shall be used to ensure that the machine/equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

Compliance: All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. Authorized employees are required to perform the lockout in accordance with this procedure. All personnel, upon observing a machine or piece of equipment that is locked out to perform servicing or maintenance, shall not attempt to start, energize or use that machine or equipment.

Checklists: A checklist is / is not required to be completed each time this procedure is performed. **(circle one)** If required, appropriate checklists are located at _____

Lockout Sequence Steps

Step 1. Notify all affected employees that servicing or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.

Affected Employees: _____

Methods to use for notification: _____

Step 2. The type and magnitude of the energy that the machine or equipment listed above involves, the hazards involved and the method of control that must be used to eliminate hazards are listed below.

Type of Energy	Hazard	Method of Control
_____	_____	_____
_____	_____	_____

Step 3. If the machine or equipment is operating, shut it down by the normal stopping procedure.

Methods for shutting down the machine/equipment listed above:

(List type & location of switch(es), valve(s), etc. and, if applicable, sequence that must be followed)

Step 4. Engage the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).

<u>Isolation Device</u>	<u>Location</u>	<u>Isolation Method</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Step 5. Lock out the energy isolating device(s) with assigned individual lock(s).

Step 6. Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.

<u>Type</u>	<u>Present?</u>	<u>Method of Restraint</u>
Pressure	_____	_____
Hydraulic	_____	_____
Pressurized	_____	_____
Vacuum	_____	_____
Thermal	_____	_____
Springs	_____	_____
Gravity	_____	_____
Electrical	_____	_____

Capacitors	_____	_____
Battery	_____	_____
Other	_____	_____

Step 7. Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s). Test as described below to make certain the equipment will not operate.

CAUTION: Return operating controls(s) to neutral or OFF position after verifying the isolation of the equipment.

Procedures/test equipment used to verify isolation:

Step 8. Lockout is complete. Perform service/maintenance as required.

Restoring Equipment to Service

When servicing/maintenance is completed, and the machine or equipment is ready to return to normal operating condition, the following steps must be taken:

(Note: Add additional details/steps as needed to ensure safe start-up)

Check the machine or equipment and the immediate area around the machine or equipment to ensure that nonessential items have been removed and that all necessary components are correctly re-assembled and intact.

Check the work area to ensure that all affected employees have been notified of intention to start-up and are safety positioned or removed from the area.

Verify that the controls are in the OFF position.

Remove the lockout devices and re-energize the machine/equipment.

Notify affected employees that servicing is complete and machine/equipment is ready for use by using the same means used to inform them of impending shut-down.

Special Considerations/Comments: _____

This procedure was approved for use by (name/organization): _____

Appendix F: State Regulations

General Safety & Health Standards

Published by the Division of Building Safety

In Cooperation with the Idaho Industrial Commission

Electrical Safety 150

Section 12. Lockout/Tagout Procedures: (7-1-97) Excerpt

- a. The employer shall establish a written program consisting of energy control procedures, personnel training, and periodic inspections to ensure that, before any personnel perform any servicing or maintenance on a machine, equipment, or circuits where the unexpected energizing, start up, or release of stored energy could occur and cause injury, the machine, equipment, or circuit is isolated from the energy source and rendered inoperative. (7-1-97)
- b. While any person is exposed to contact with parts of fixed electric equipment or circuits which have been de-energized, the circuits energizing the parts shall be locked-out or tagged or both in accordance with the following requirements in the order presented: (7-1-97)
 - i. A safe procedure for de-energizing circuits and equipment shall be determined before circuits or equipment are de-energized; (7-1-97)
12 Idaho General Safety & Health Standards Electrical Safety 150
 - ii. The circuits and equipment to be worked on shall be disconnected from all electric energy sources (Control circuit devices, such as push buttons, selector switches, and interlock, shall not be used as the sole means of de-energizing circuits or equipment.); (7-1-97)
 - iii. Stored electric energy which might endanger personnel shall be released. (Capacitors shall be discharged and high capacitance elements shall be shorted-circuited and grounded, if the stored electric energy might endanger personnel.); (7-1-97)
 - iv. Stored non-electrical energy in devices that could re-energize electric circuit parts shall be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device. (7-1-97)
- c. A lock and a tag or a multiple lockout or multiple tagout device shall be placed on each disconnecting means used to de-energize circuits and equipment on which work is to be performed. The lock shall be attached so as to prevent persons from operating the disconnect means unless they resort to undue force or the use of tools. Each tag shall contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag. If a lock cannot be applied, or if the employer can demonstrate that tagging procedures will provide

a level of safety equivalent to that obtained by the use of a lock, a tag may be used without a lock. A tag used without a lock shall be supplemented by at least one additional safety measure that provides a level of safety equivalent to that provided by use of a lock such as removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device. A lock may be placed without a tag only when all of the following conditions have been met: Only one circuit or piece of equipment is de-energized, the lockout period does not extend beyond the work shift, and personnel exposed to the hazards associated with re-energizing the circuit or equipment are familiar with this procedure. (7-1-97)

- d. Verification of the de-energization of circuits or equipment shall be by a qualified person who shall do one of the following; (7-1-97)
 - i. Operate the equipment controls or otherwise verify that the equipment cannot be restarted or; (7-1-97)
 - ii. Use test equipment to test the circuit elements to which personnel will be exposed and shall verify that the circuit elements and equipment parts are de-energized. The test shall also determine if any energized condition or re-accumulation of energy exists as a result of inadvertently induced voltage or unrelated voltage back feed even though specific parts of the circuit have been de-energized and presumed to be safe. (7-1-97)
- e. Re-energizing of circuits or equipment, even temporarily, shall be in accordance with the following requirements in the order presented: (7-1-97)
 - i. A qualified person shall conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized; (7-1-97)

13 Idaho General Safety & Health Standards Electrical Safety 150
 - ii. Personnel exposed to the hazards associated with re-energizing the circuit or equipment shall be warned to stay clear of the circuits and equipment; (7-1-97)
 - ii. Each lock and tag shall be removed by the person who applied it or under their direct supervision. However, if the person who applied the lock and/or tag is absent from the workplace then the lock and/or tag may be removed by a qualified person designated to perform this task provided that the employer ensures that the person who applied the lock and/or tag is not available at the workplace and the employer ensures that the person is made aware that the lock and/or tag has been removed before they resume work at the workplace. (7-1-97)

Appendix G: Annual Evaluation

The scope for the annual evaluations of this program include:

- Review of documentation of training, authorized employees, affected employee lists, and the equipment inventory
- Review of a percentage of the equipment specific procedures
- Review of suggestions
- Review of reported incidents of accidents involving hazardous energy control

Hazardous Energy Control Program Metrics

Metric	Goal	Actual
% of authorized employees trained within 1 month of assignment or renewal within 2 years	95%	
% of affected employees (equipment operators) trained within 1 month of assignment or renewal within 2 years	95%	
% of Authorized workers with sufficient personal, marked locks	100%	
% of equipment with hazardous energy which are on the equipment inventory	100%	
Local Appendices are maintained	95% Error Free	
Lock-out/tag-out errors observed/processes observed	100% Error free	

Note: Copies of Annual Evaluations are placed following this page.