Lockout/Tagout Safety Program (Energy Control)

ENVIRONMENTAL HEALTH & SAFETY

Table of Contents

Lockout/Tagout Safety Program (Energy Control)

A. PURPOSE

The purpose of the University of Oregon (UO) Energy Control Program (Lockout/Tagout) is to define procedures for the control of hazardous energy**.** These procedures cover the servicing and maintenance of equipment in which the unexpected energizing, start up, or release of stored energy could cause serious injury to employees.

All sources of energy, including electrical, mechanical, hydraulic, pneumatic, chemical, gravitational, steam, and thermal need to be considered. The primary method of control of hazardous energy will be accomplished by utilization of Lockout/Tagout procedures.

B. SCOPE

The Lockout/Tagout Safety Program will apply to all UO Employees and Contractors while performing their work duties. Individual Departments are charged with the responsibility of identifying equipment and machinery which will be subject to the LO/TO procedures as well as identifying Employees who will be affected. Supervisors are responsible for identifying equipment having the characteristics as defined above and for providing machine specific instruction in the LO/TO procedures to Authorized Employees who work on that equipment.

If one or more of the following conditions exist, the responsible Department **shall** provide machine specific Lockout/Tagout procedures:

1. The machine or equipment has potential for stored or residual energy or re-accumulation of stored energy after shut down.
2. The machine or equipment has more than a single energy source which can be readily identified and isolated.
3. The isolation and Locking out of that energy source will not completely de-energize and deactivate the machine or equipment.
4. The machine or equipment is not isolated from that energy source and Locked-out during servicing or maintenance.
5. A single Lockout device will not achieve a complete Locked-out condition.
6. The Lockout device is not under the exclusive control of the Authorized Employee performing the servicing or maintenance.
7. The servicing or maintenance could create hazards for other Employees.

8. The Department, when using a Lockout procedure, has had an accident involving the unexpected activation or re-energizing of the machine or equipment during servicing or maintenance.
9. Departments will develop, update, and train Employees on their own machine specific procedures in addition to the UO general LO/TO procedures training provided by Environmental Health and Safety (EHS).

C. DEFINITIONS

1. *"**Affected Employee**"* – means Employees working on or around equipment that has been Locked or Tagged-out but not trained on the Lockout/Tagout procedures. An Affected Employee can become an Authorized Employee when that Employee's duties include performing servicing or maintenance covered under this program and receives proper training by EHS and the Supervisor.
2. *"**Authorized Employee**"* – means a person who Locks-out or Tags-out machines or equipment in order to perform servicing or maintenance on that machine or equipment.
3. *"**Authorized Supervisor**"* – means the Supervisor of Authorized Employees performing LO/TO procedures.
4. *"**Energy-Control Procedures**"* – means the written procedures that describe how workers will secure energy-isolating devices, use and remove Locks and Tags, and test energy-isolating devices.
5. *"**Lockout/Tagout Program**"* – means the written program that at a minimum requires identifying machinery and/or processes having energy sources in the workplace that require LO/TO procedures before working on or maintaining equipment in the workplace, how to secure said machinery and processes, training requirements to be an Authorized Employee, and responsibilities of all parties involved with the processes, etc.
6. *"**Periodic Inspection**"* – means the periodic inspection is an annual evaluation of the energy-control procedures for equipment that is Locked out or Tagged out by Authorized Employees that is completed by a Supervisor or designated Authorized Employee who understands the energy-control procedures for the equipment.
7. *"**Safety Violation**"* – means anyone not following established written LO/TO procedures that jeopardizes any UO Employee(s) or other individuals.
8. *"**Training**"* – means Employee training conducted by EHS and Authorized Supervisor on the energy-control program including the LO/TO basic and machine specific instructions.

D. RESPONSIBILITIES

1. **Environmental Health and Safety (EHS)** is responsible for:
    a. Writing, updating, and maintaining the University-wide written general Lockout/Tagout Program and procedures.
    b. Providing general LO/TO training to Authorized Employees, plus other Employees as needed.
    c. Maintaining general LO/TO training documentation for EHS trained Employees.
2. **Contractors** are responsible for:
    a. Following their Lockout/Tagout Program.
    b. Upon request, provide a written copy of their Lockout/Tagout program to EHS for review prior to work starting.
    c. Inform other UO Departments of each other's LO/TO procedures and coordinate work involving group interfacing.
    d. Applying own Locks and/or Tags in accordance to their LO/TO program.
3. **Departments** are responsible for:
    a. Augmenting the UO basic LO/TO procedures with Department, equipment and/or process with machine specific procedures.
    b. Ensuring the Authorized Employees and Supervisors are fulfilling their LO/TO program related responsibilities.
    c. Providing LO/TO equipment to Supervisors and Authorized Employees in order for them to perform complete LO/TO procedures, including but not limited to suitable locks, tags, multi-locking devices, and other supplies required to ensure the LO/TO procedures are followed.
4. **Authorized Supervisors** are responsible for:
    a. Their Authorized Employees being trained on how to Lockout and/or Tagout the various components (singularly or collectively) using the UO basic LO/TO Program and Department machine specific instructions.
    b. Supervising Employee(s) to ensure that all Authorized and Affected Employees are following proper LO/TO procedures.
    c. Ensuring all equipment and/or processes can be properly Locked and/or Tagged out in compliance with established UO LO/TO procedures which follow OR-OSHA rules.
    d. With any addition or change of equipment, the Supervisor is responsible for seeing that the Lockout machine specific instructions are written or modified.
    e. Performing annual inspections of LO/TO procedures on Authorized Employees.

5. **Authorized Employees** are responsible for:
   a. Following LO/TO procedures for machines and/or processes in accordance to basic UO LO/TO and Department machine specific instructions in order to perform servicing or maintenance work.
   b. Recognizing possible changes and additional hazards not listed in the current LO/TO procedures.
   c. Immediately notifying Supervisor of possible changes and additional hazards not listed in the current LO/TO procedures.
   d. Notifying Affected Employees to keep them aware of LO/TO procedures in process.

6. **Affected Employees** are responsible for:
   a. Following the instructions of the Authorized Employee and Supervisor when the job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under LO/TO Program, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

E. LOCKOUT VERSUS TAGOUT

1. Lockout shall be the exclusive method used for the isolation of all energy sources which are designed to accept a locking device.

2. Tagout devices, such as tags or signs, must be used if a Locking device cannot be attached to the control switch or valve. Tags and their means of attachment are to be substantial enough to prevent inadvertent or accidental removal. Nylon cable ties with a minimum 50 lb. breaking strength are the recommended method of tag attachment. A Supervisor shall be notified when equipment is identified that is not capable of accepting a Locking device.

3. The energy control switch or valve for the equipment shall be made to accept a Locking device whenever new equipment is installed or whenever work including replacement, major repair, renovation or modification is performed.

4. The basic LO/TO rule mandates that all equipment shall be Locked or Tagged to protect against accidental or inadvertent operation when such operation could cause injury to personnel.

F. MACHINE AND/OR PROCESS SPECIFIC LOCKOUT PROCEDURES

Based on the reasons and conditions listed in the **SCOPE** section of this written program, each applicable Department will develop and update machine and/or process specific LO/TO instructions for the Authorized Employees to follow before starting repairs and/or

maintenance. In each machine specific instruction list there will be specific steps to follow to de-energize the machinery and then energize after the work is completed. At a minimum the machine specific instruction will include:

1. Name of the machine/process and location.
2. Identify types of stored energy.
3. Notifying Affected Employees.
4. List of steps and where to Lockout each energy source.
5. Release any stored energy.
6. Test start Locked out machinery to make sure it doesn't start.
7. List of steps to re-energize machinery and when to notify Affected employees.

G. SEQUENCE OF LOCKOUT OR TAGOUT SYSTEM PROCEDURES

The following general sequence of Lockout or Tagout procedures shall be followed as a minimum guideline in which an Authorized Employee is required to remove or bypass a guard or other safety device(s), when an Employee is required to place any part of his/her body into an area on a piece of equipment at the point of operation or where an associated danger exists during an operating cycle. This list doesn't preclude any machine specific instructions that should apply and be followed first.

1. Prior to turning off the equipment, the Authorized Employee shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, the means or methods to control the energy, and the knowledge of any potential source of stored or residual energy.
2. Notify ALL Affected Employees within the immediate affected area that a Lockout or Tagout is going to be utilized and the reason why.
3. If the equipment is operating, shut it down by the normal stopping procedure.
4. Operate the switch, valve, or other energy isolating device(s) so that the equipment is isolated from its energy source(s).
5. Lockout and/or Tagout the energy isolating devices with assigned individual lock(s) or tag(s). Lockout/Tagout devices are to indicate the identity of the Employee applying the device(s). Following the application of Lockout/Tagout devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, or otherwise rendered safe.
6. Prior to starting work on machines or equipment that have been Locked or Tagged out, the Authorized Employee shall verify that isolation and de-energizing of the machine or

equipment has been accomplished by pushing the start button, test circuits on, and operate valves to test system. All machinery, regardless of energy source (steam, hydraulic, electric, air, gravity, etc.) shall be properly checked and tested for safe Lockouts before anyone beings work. **Caution:** Return operating controls to neutral or "off" position after the start test.

7. At this point the equipment is considered to be Locked or Tagged out.
8. If Lockout is the energy control method utilized, the Authorized Employee is to keep the key in his/her possession for the duration of the Lockout period.
9. No Employee shall borrow or loan Locks and Tags. Employees must use their own individual assigned Locks and Tags.
10. If several Authorized Employees are working on piece of equipment, each Employee must Lockout and Tag the equipment with their own LO/TO equipment. No one shall be allowed to rely upon or use the other Employees' Locks and/or Tags already applied.

H. RESTORING EQUIPMENT TO NORMAL OPERATIONAL STATUS

Before Lockout or Tagout devices are removed and energy is restored to the equipment, the following basic procedures shall be taken by the Authorized Employee. This list doesn't preclude any machine specific instructions that should apply and be followed first.

1. Inspect the work area to ensure that non-essential items have been removed and ensure the machine or equipment components are operationally intact. Check to confirm guards, railings, SDS labels and safety signs are replaced, and area is clear of tools, scrap and personnel.
2. Check the work area to ensure that all Employees have been safely positioned or removed.
3. Before Lockout or Tagout devices are removed and before the equipment is energized, Affected Employees in the immediate area shall be notified that the Lockout or Tagout device(s) will be removed and the area is clear.
4. When cleanup work is done, each Authorized Employee removes his/her own Lock(s) and Tag(s).
5. Startup equipment.

I. LOCKOUT OR TAGOUT DEVICE REMOVAL

Each safety Lockout or Tagout device may only be removed by the Authorized Employee who applied the device with one exception.

Removal of a safety Lockout or Tagout device by any other person than who applied the device may only be done by under direction of the direct Supervisor, or if he/she is not on site another Supervisor, under the following procedure:

1. The Supervisor must verify that the absent Authorized Employee who applied the device is not at work.
2. Attempts by the Supervisor to contact the absent Authorized Employee must be made by phone and/or through other means, to ask him/her to return to the worksite and remove his/her Locks and Tags.
3. In the event the absent Authorized Employee hasn't been reached to remove the LO/TO device, then and only then, may the Lock be removed under the direction of the direct Supervisor, from the equipment and the equipment be energized and placed in operation.
4. Then the Supervisor must make all reasonable efforts to again contact the Authorized Employee to inform him/her that their device has been removed.
5. The Supervisor must ensure that the absent Authorized Employee is informed that his/her authorized LO/TO device has been removed before he/she resumes work at the facility.
6. If the above Lock or Tag removal process happens, the Authorized Supervisor shall document the sequence of events in a written report to the Department Manager explaining why it was necessary, who made the Employee search, and the equipment being energized and placed in operation. This report is to be filed by the Department for future reference.

J. PROCEDURE INVOLVING MORE THAN ONE PERSON

In the preceding steps, if more than one individual is required to Lockout/Tagout the same equipment, each shall place his/her own personal Lockout/Tagout device on the energy isolating device(s). When an energy isolating device cannot accept multiple locks or tags, a multiple Lockout or Tagout device (hasp) is to be used.

When more than one Authorized Employee has implemented Lockout/Tagout in order to assist in the servicing or maintenance of equipment, only the person who applies the first lock and the person, who removed the last lock, will be required to notify Affected Employees in the immediate affected work area of the application and removal of Lockout/Tagout devices.

K. TESTING OR POSITIONING OF EQUIPMENT OR COMPONENTS

In situations where LO/TO devices must be temporarily removed from the energy isolating device and the equipment energized to test or position the equipment or one of its components, the Authorized Employee will comply with established Department LO/TO machine specific procedures and at a minimum the following. This list doesn't preclude any machine specific instructions that should apply and be followed first.

1. Clear the machine or equipment of tools and materials.
2. Remove employees from the machine or equipment area.
3. Remove the Lockout/Tagout device.
4. Energize and proceed with testing or positioning.
5. If additional repairs or work needs to be done, de-energize all systems and reapply the appropriate energy control devices in accordance with minimum procedures written in this policy or superseded by the Department's machine specific instructions.

L. OUTSIDE PERSONNEL (CONTRACTORS)

Whenever outside personnel are to be engaged in activities requiring the control of hazardous energy, they must use their own Lockout/Tagout program. Upon request, outside personnel (Contractors) are to provide a written copy of their Lockout/Tagout Program to EHS for review prior to work being started.

The UO Construction Project Manager, Maintenance Supervisor, or Contract Officer, outside Contractor, and any other additional affected UO Departments or Supervisor, are to inform each other of their respective Lockout/Tagout procedures and coordinate work involving group interfacing. Contractors must use and apply their own Locks and Tags.

M. PERIODIC LOCKOUT/TAGOUT PROCEDURE INSPECTION

The Supervisor of each University unit that uses the Lockout/Tagout program will perform a periodic inspection of the energy control procedure at least annually in his/her unit for each Authorized Employee to ensure that the procedure and the requirements of the UO's Lockout/Tagout rules are being followed. UO Safety Personnel may at any time also inspect operating procedures.

1. The periodic inspection shall be performed by a Supervisor or Authorized Employee other than the Employee(s) utilizing the energy control procedure being inspected.
2. The periodic inspection will be designed to correct any deviations or inadequacies observed.

3. The Supervisor will document that the periodic inspections have been performed and certify the Authorized Employees are competent in performing work tasks. The documentation will identify the equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection. A copy of this Authorized Employee annual inspection documentation will be provided to the University Safety Officer at EHS within 30 days of completion and all inspections completed by December 31st each year. Documentation using the UO Energy Control Program Inspection Form is acceptable.
4. Any deviations from the University LO/TO procedures will immediately be corrected at the time and documented on the UO Energy Control Program Inspection Form. Those deviations in procedures warrant attending a Supervisor or EHS LO/TO retraining session.

N. TRAINING AND COMMUNICATION

Training will be provided to help ensure that the purpose and procedures of the Energy Control Program are understood by Employees and that the knowledge and skill required for the safe application, usage, and removal of Lockout/Tagout devices are conveyed to Employees. The training will include the following:

1. A basic Lockout/Tagout training will be conducted by the UO Environmental Health and Safety (EHS) department for Authorized Employees.
2. Each Authorized Employee will receive job specific training by their Supervisor:
    a. In the recognition of applicable hazardous energy sources.
    b. Of the type and magnitude of the energy available in the workplace.
    c. On the methods and means necessary for energy isolation and control.
    d. On the machine specific instructions and procedures within the Department's equipment/machinery.
3. Each Affected Employee will be instructed by their Supervisor on the general purpose and use of the energy control procedure, (e.g. Locks and Tags).

O. EMPLOYEE RETRAINING

Retraining will be conducted whenever:

1. A periodic inspection reveals, or whenever there is reason to believe that there are deviations from or inadequacies in the Employee's knowledge or use of an energy control device.

2. Other examples include a change in job assignment, machinery, equipment, or energy control procedures.
3. More serious LO/TO safety violations warranting at a minimum retraining include but not limited to:
    a. Borrowing or loaning individually assigned Locks.
    b. Failing to Lockout and/or Tagout equipment.
    c. Relying on someone else's Lockout.
    d. Pushing a control button/switch when there is a Lock and/or Tag on the control or power source (other than the person who is Locking out to confirm the equipment is de-energized).

P. TRAINING DOCUMENTATION

1. The basic Lockout/Tagout training will be documented by EHS after presenting it.
2. The Supervisor will ensure the job specific training is documented.

Q. MINIMUM TAGOUT TRAINING REQUIREMENTS

Authorized Employees will be trained in the following limitations of Tags:

1. 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.
2. When a Tag is attached, it is not to be removed except by the Authorized Employee responsible for it, and it is never to be bypassed, ignored, or otherwise defeated. In order to be effective, Tags must be legible and understandable by all Employees whose work operations are or may be in the area.
3. Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.
4. Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall Energy Control Program.
5. Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

T. PROGRAM REVIEW DOCUMENTATION

This Lockout/Tagout Safety Program is not all inclusive to what an Employee might need for job specific duties. Review of this program will be conducted by EHS and revisions made as necessary.

Original Preparation Date: 1990
Last Revision Number: 14
Last Review Date: May 20, 2015
Authorization: EHS Associate Director

Contact: Ben Carlson, Occupational Safety Officer
(541) 346-2867 | bencar@uoregon.edu