Weber State University

Lockout/Tagout

OSHA 29 CFR 1910.147 The Control of Hazardous Energy

WEBER STATE UNIVERSITY
Environmental Health & Safety

Published by the
Environmental Health and Safety Office
3734 Dixon Parkway, Ogden, UT 84403

Revision Date: 10/2022

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I. PURPOSE

The lockout/tagout program at Weber State University (WSU) aims to establish standard operating procedures for controlling the unexpected start-up, energizing, or release of stored energy, which could cause injury to personnel. Machines and equipment shall be stopped, isolated from energy sources, and locked out before employees perform activities such as, but not limited to, servicing, repairing, installing, testing, cleaning, or inspecting equipment or systems.

All affected WSU personnel must receive lockout/tagout training and comply with these procedures. Failure to comply with this program will involve disciplinary action, which as a minimum, will include a written warning and may include time off without pay, suspension, or termination.

II. SCOPE

This written program applies to all forms of energy that might unexpectedly be energized and cause injury or property damage. This includes electrical, mechanical, pneumatic, hydraulic, stored (kinetic), and other potentially hazardous sources.

This written program will correlate with outside contractors' lockout/tagout programs. Before any work is performed, contractors shall be informed of WSU's lockout/tagout procedures by an appointed member of Facilities Management (FM).

These procedures do not apply to:

1. Cord and plug connected electric equipment for which the cord is unplugged and under the exclusive control of the employee performing the service or maintenance.
2. Hot tap operations involving transmission and distribution systems for substances such as gas, steam, water, or petroleum products when they are performed on pressurized pipelines. This is provided that the FM employee demonstrates that continuity of service is essential, the shutdown of the system is impractical, documented procedures are followed, and special equipment is used, which will provide proven adequate protection for employees.
3. Minor tool changes and adjustments and other minor servicing activities, which occur during normal operations if they are repetitive and integral to the use of the equipment for production, provided that the work is performed using alternative measures that provide adequate protection.
4. Servicing or maintenance that takes place during normal routine operations, *unless*:
    a. An employee is required to remove or bypass a guard or other safety device.
    b. An employee is required to place any part of their body into an area on a machine where work is performed upon the material being processed

III. GENERAL RULES

1. Only trained maintenance or service personnel are authorized to lockout/tagout WSU equipment. Personnel will be required to carry or have available a lock, lockout devices, and/or tags.
2. If a device can be locked out, service personnel shall use lockout/tagout procedures. If the device cannot be locked out, lockout tags shall be used.
3. For all equipment or machines that require multiple steps to isolate, block, secure, or shut down, procedural steps will be developed and made available as necessary. As each procedure is developed, it will accompany the affected work order.
4. Individuals working on lines containing water, gas, air, steam, or any other stored energy shall isolate the portion of the system being worked on by shutting off necessary valves and bleeding off the pressure as required. Valves will be locked off using a chain or other device.
5. Duplicate keys to the lockout tagout shall not be issued to other individuals. The individual doing the lockout will have complete control of the keys to prevent anyone else from energizing the equipment during servicing.
6. The lockout/tagout device shall indicate the employee's identity who attached the device.
7. Never remove another person's lock or tag, or attempt to operate equipment that has been locked or tagged out. Any person who removes another person's lockout device or attempts to override equipment that is locked out is subject to a minimum of a written warning and may include time off without pay, suspension, or termination.
8. The locks and tags used for lockout/tagout will not be used for any other purpose.
9. All new equipment installed or existing equipment, when modified, must be designed to accept a lockout device where possible.
10. Lockout devices shall be of standard industry design and colors throughout all campus facilities when possible.
11. Any switch or valve that cannot be locked off shall be clearly tagged. Tagouts must be placed at points where equipment is normally energized where possible.
12. Tagouts are acceptable only if additional safety measures are implemented, such as blocking a controlling switch or removing a hot lead, shutting off an additional circuit breaker, or removing a valve handle.
13. Every tagout must contain at least the service person's name, date, equipment controlled, and how to contact that person.
14. Each shop will maintain a supply of lockout or tagout devices.

IV. PROCEDURES

Applying the Lockout or Tagout device

The lockout/tagout procedures shall only be performed by authorized employees. They shall have a knowledge of the type and magnitude of the energy involved, the hazard(s) of the energy, and the method to control the energy.

1. Notify all affected employees or departments if an energy source is shut down.
2. Make a survey to locate and identify all energy sources that need to be isolated.
3. Shut down the machine or equipment using standard procedures (depress stop button, open toggle switch, etc.).
4. Isolate the equipment from its energy source by locating and operating the switches, valves, breakers, etc.
5. Release or restrain any stored energy such as that within air compressors, water tanks, pumps, flywheels, hydraulic rams, springs, electrical capacitors, inertia, gravity, etc. Utilize methods such as repositioning, blocking, bleeding down, etc.
6. Lockout or tagout the energy isolating device with assigned individual lock(s) or tag(s). NOTE: If more than one individual is working on a piece of equipment, each individual shall place their personal lock and tag on the energy isolating device.
7. After ensuring that no personnel are endangered, try to operate the controls to ensure the equipment is de-energized when possible. NOTE: return the operating control(s) to the neutral or off position after this test.

Some equipment requires specific procedural steps for shutting down and isolating the energy source. Such equipment may include valves, fans, pumps, etc. These types of equipment shall have the procedural steps posted on or near that equipment.

Removing the Lockout or Tagout Device

1) Notify all affected employees that the lockout or tagout device will be removed and the equipment is ready for normal operation.
2) Inspect the work area to ensure nonessential items such as tools and materials have been removed.
3) Ensure that all personnel are clear of any moving parts or energized components.
4) Remove all lockout or tagout devices. Each person will remove their personal lock or tag from the energy isolating device. No one else can remove another's lockout/tagout device.
5) Operate the energy isolating device to restore the equipment to normal operation.

If the authorized employee is not available to remove their lock or tag, the device may be removed exclusively by the department supervisor with approval from the corresponding superintendent and director. This is only after every effort has been made to contact the authorized employee. The supervisor shall check the work area to ensure that all employees have been safely positioned or removed. After the lockout/tagout device has been removed, the supervisor will ensure that the authorized employee has knowledge of this before they resume work at the facility.

Group Lockout or Tagout

When servicing or maintenance requires more than one person or department, an authorized employee will be assigned to oversee the lockout or tagout application. The person who is

ultimately responsible for the piece of equipment will be designated as the authorized person. They will also be the first and last person to install and remove their lockout or tagout device.

The authorized employee will be responsible for:

1) The application of a multi-lock accepting device;
2) Ensuring that all members of the group apply their personal lock or tag;
3) Ensuring that each lock or tag is removed by the owner after they have completed the work;
4) Ensuring that power is not restored to the equipment until everyone involved has completed their work, removed their lock or tag, and cleared the area.

V. OUTSIDE SERVICE PERSONNEL

Whenever outside servicing personnel are engaged in activities covered by the scope and application of this program, the director of FM, or their designee, will appoint a contact from FM who will ensure the contractor follows proper lockout or tagout procedures. The facilities management representative and the outside employer shall inform each other of their respective lockout/tagout programs. The outside employer shall comply with their own program as long as it meets or exceeds the requirements of WSU's procedures. They will also be responsible for providing their own lockout or tagout equipment. If the outside employer has no documented lockout or tagout procedures, they shall comply with the procedures established in WSU's program.

VI. TRAINING

The WSU Environmental Health and Safety Office will provide lockout/tagout training on an annual basis or as the situation warrants. Training shall be provided so that each employee understands the purpose of the energy control program and its requirements. The training should also help each employee acquire the knowledge and skills necessary for the safe application, usage, and removal of energy controls.

Department supervisors will be responsible for ensuring their employees follow the lockout/tagout procedures. If deviations or inadequacies are noted, those employees shall be retrained. Retraining will also be required if there is a change in job assignments, equipment, processes, or energy control procedures.

New employees shall be trained as quickly as a training class is available. In the interim, the supervisor shall review the lockout/tagout procedures and ensure that they understand the program requirements. One of these training methods must occur before an employee can receive a lock. Training topics that both the scheduled class and the supervisor cover should include the following:

1) The purpose and use of the energy control procedures.
2) Instructions on the consequences of attempting to restart or re-energize machines

or equipment which are locked out or tagged out.

3) The limitations and correct usage of tags.
4) The proper procedures for applying and removing lockout or tagout devices.

A training outline and training records will be maintained in the Environmental Health and Safety office.

VII. INSPECTION & REVIEW

All supervisors overseeing lockout/tagout procedures should conduct periodic assessments of the energy control procedures to ensure that the requirements of this program are followed. The Environmental Health and Safety (EHS) Office shall perform periodic inspections at least annually. The annual inspection will include a visual inspection of a lockout or tagout operation performed by an Authorized Employee. Both a simple shut down procedure and a complex procedure requiring written directions may be reviewed. Documentation of the inspection will include: the machine or 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. Copies of the inspection shall be maintained by the EHS Office.

APPENDIX A: DEFINITIONS

Affected employee - An employee whose job requires them 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 - A person who locks out or tags out machines or equipment to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when their duties include performing servicing or maintenance covered under this section. All authorized employees shall attend lockout/tagout/tryout training or be instructed by their supervisor before being issued a lock.

Capable of being locked out - An energy isolating device is capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Additional energy isolating devices are capable of being locked out if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

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: 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 electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy source.

Hot tap - A procedure used in the repair maintenance and services activities that involves welding on a piece of equipment (pipelines, vessels, or tanks) under pressure in order to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam, and petrochemical distribution systems.

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 - A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.

Normal production operations - The 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, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming 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 - Any work performed to prepare a machine or equipment to perform its normal production operation.

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 - A prominent warning device, such as a tag and a 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.

Tryout – A process of testing controls by attempting to operate equipment before completing any tasks to identify if there are any faults with the Isolation Point(s)

APPENDIX B: RESPONSIBILITIES OF WEBER STATE UNIVERSITY PERSONNEL

A. Environmental Health and Safety Office

1. Oversee the Lockout/Tagout program
2. Perform training and ensure that training records are maintained
3. Perform annual inspections of the program to ensure that the requirements are followed
4. Review and update the written program at least annually

B. Authorized Employees

1. Follow the procedures obtained through training and outlined in the written program
2. Shut down equipment/machines
3. Apply locks/tags
4. Verbally notify all Affected and Other Employees that the shutdown is about to commence
5. Explain the purpose of use of the specific energy control procedure to be applied
6. Verbally notify all Affected, and Other Employees of removal of locks/tags and that restart of equipment is about to commence

C. Authorized Employee Supervisors

1. Ensure all Authorized Employees obtain proper training
2. Conduct periodic assessments of the energy control procedure to ensure that the procedure and the requirements of this program are being followed
3. Correct any deviations or inadequacies identified in the inspections

D. Affected Employee Supervisors

1. Train Affected Employees in the recognition, purpose and use of lockout/tagout devices
2. Educate Affected Employees on the dangers of never removing a lock or tag, or attempt to operate equipment that has been locked or tagged out. Any person who removes a lockout device or attempts to override equipment that is locked out is subject to a minimum of a written warning and may include time off without pay, suspension, or termination.
3. Instruct Affected Employees when energy control procedures are in place to ensure that no attempts to restart or reenergize machines or equipment which are locked out or tagged out will occur

E. FM Contact for Outside Service Personnel

1. Coordinate with outside contractor on each other's respective lockout/tagout procedures
2. Verify outside contractor has lockout/tagout procedures that meet or exceed that of the University
3. Ensure university personnel understand and comply with the restrictions and prohibitions of the outside employer's energy control program
4. Ensure outside contractor has their own lockout/tagout equipment