

University of Wisconsin-La Crosse

Occupational Safety Policy

Subject: Control of Hazardous Energy (Lockout/Tagout)
Original: December 1994
Last Update: December 2020

I. APPLICABLE DOCUMENTS

Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910.147; Control of Hazardous Energy

II. PURPOSE

This standard establishes the minimum requirements for the lockout of hazardous energy whenever maintenance or servicing is performed on machines or equipment. It shall be used to ensure that the machine or equipment is not energized, 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.

III. SCOPE AND POLICY

A safe and healthful work environment shall be provided to all UWL employees. When engineering or administrative controls will not provide an acceptable level of protection, personal protective equipment will be provided to achieve safe working conditions. This occupational safety policy applies to the control of hazardous energy during servicing and/or maintenance of machines and equipment if:

1. An employee is required to remove or bypass a guard or other safety device; or
2. An employee is required to place any part of their body into an area on a machine or piece of equipment where work is being performed at or upon the point of operation, or when an associated danger zone exists during a machine operating cycle.

This standard does not apply to work on cord-and-plug connected electrical equipment when the employee performing the service or maintenance controls energization by unplugging the equipment from the energy source. The standard also does not apply to hot tap operations involving transmission systems from substances such as gas, steam, water, or petroleum, when they are performed on pressurized pipelines. However, it must be demonstrated that the continuity of service is essential, shut off of the system is impractical, and special equipment is used which provides effective protection. Approval must be granted by the Executive Director or Facilities Planning and Management or the Director of Facilities Management prior to any hot tap operations.

IV. 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: A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section.

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

Hot tap: A procedure used in the repair, maintenance and services activities which involves welding on a piece of equipment (pipelines, vessels or tanks) under pressure, in order to install connections or appurtenances. Hot tap 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.

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.

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.

V. PROGRAM RESPONSIBILITIES

Departments/Units Each university department/unit is responsible for evaluating areas under its administrative control to determine if there are processes or equipment which the lockout/tagout program applies. Departments/units are responsible for implementation of lockout/tagout in their department/unit.

Directors, Managers and Supervisors Directors, managers and supervisors are responsible for: designation of authorized employees, ensuring that employees are properly trained, maintenance of program records, developing equipment specific energy control procedures, making available lockout/tagout devices and completion of annual program reviews.

Employees Authorized employees are responsible for observing all practices and procedures contained in the UWL lockout/tagout program, for attending designated training and for reporting hazardous or unsafe conditions to their supervisor and/or EH&S.

Environmental Health and Safety (EH&S)

EH&S will conduct or coordinate lockout/tagout training, provide recommendations to update lockout/tagout policy and assist managers, supervisors or employees in developing written energy control procedures.

VI. ENERGY CONTROL PROCEDURES

Authorized employees shall use written energy control procedures in section VI, subsections A through C, when engaged in activities requiring compliance with this standard. In some cases specific energy control procedures are required for machines and equipment. A machine and/or equipment specific energy control procedure does not have to be developed when all of the following factors exist.

1. The machine or equipment has no potential for stored or residual energy or re-accumulation of stored energy after shut down.
2. The machine or equipment has a single energy source which can be readily identified and isolated.
3. The isolation and locking out of that energy source will completely de-energize and deactivate the machine or equipment.
4. The machine or equipment is isolated from that energy source and locked out during servicing or maintenance.
5. A single lockout device will achieve a locked-out condition.
6. The lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance.
7. The servicing or maintenance does not create hazards for other employees.
8. The employer, in utilizing this exception, has had no accidents involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.

When needed, written energy control procedures will be posted on or in visible proximity to the machine or equipment requiring servicing or maintenance. EH&S will assist directors, managers or supervisors in Facilities Management, Residence Life and Student Centers with developing and posting procedures.

A. Lockout/Tagout Sequence – For use when servicing or maintaining energized equipment.

1. The authorized employee shall identify the type and magnitude of the energy that the machine or equipment utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.
2. 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.
3. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress the stop button, open switch, close valve, etc.).
4. De-activate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).
5. Lock out the energy isolating device(s) with assigned individual lock(s). Attach a lockout tag that identifies the authorized employee performing the servicing and/or maintenance. If a lock cannot be applied to an energy isolating device a tag is allowed as long as at least one additional safety measure is used that provides a level of safety equivalent to that of use of a lock. Such safety measures include, but are not limited to, opening an additional disconnecting device, removal of an isolating circuit element, blocking of a controlling switch or the removal of a valve handle.
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.

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) or by testing to make certain the equipment will not operate.
8. The machine or equipment is now locked out.

B. Temporary Release of Lockout/Tagout - For use when it is necessary to temporarily remove lockout/tagout devices in order to test or position machines or equipment.

1. Visually inspect the machine to be sure it is operationally intact, tools have been removed and that items that may pose a hazard upon activation are controlled.
2. Visually inspect the work area to ensure that all employees have been safely positioned or removed from any hazardous area.
3. Verify that the controls are in neutral.
4. Remove the lockout and/or tagout devices and proceed with testing or positioning.
5. De-energize all systems and reapply lockout/tagout as described in subsection VI. A.

C. Restoring Equipment to Service - For use when servicing or maintenance is completed.

1. Visually inspect the machine to be sure it is operationally intact, tools have been removed and guards have been replaced.
2. Visually inspect the work area to ensure that all employees have been safely positioned or removed from any hazardous area.
3. Verify that the controls are in neutral.
4. Remove the lockout and/or tagout devices and reenergize the machine or equipment.
5. Notify affected employee that the servicing or maintenance is completed and the machine or equipment is ready to use.

VII. PROCEDURE INVOLVING MORE THAN ONE PERSON

If more than one individual is required to lockout equipment each authorized employee shall place their personal lockout device on the energy isolating device(s). When an energy isolating device cannot accept multiple locks, a hasp or group lock box shall be used.

The following rules shall be implemented if a group lock box is required.

1. An authorized employee shall exercise primary responsibility for the equipment being serviced.
2. The primary authorized employee will complete all lockout/tagout procedures, from initiation through restoring equipment to service.
3. Each authorized employee will be assured of his/her right to verify individually that the hazardous energy has been isolated and/or de-energized.

VIII. TRANSFER OF LOCKOUT/TAGOUT

An authorized employee may transfer lockout and/or tagout protection to a second authorized employee. The second authorized employee shall place their lockout and/or tagout device prior to or at the time the original authorized employee removes their lockout and/or tagout devices.

When shift changes or other circumstances may prevent the two authorized employee's from being on site at the same time a shift lock shall be used. An authorized employee's supervisor should install the shift lock. No person shall work under the protection of a shift lock. The supervisor attaching the shift lock shall transfer lockout/tagout protection prior to additional work on the machine or equipment.

IX. ABANDONED LOCK REMOVAL

If a lock has been left in place by an authorized employee who has departed the campus it can be removed only if deemed necessary by the authorized employee's supervisor or other supervisor responsible for the equipment, machine or area. In such cases the lock shall be removed only by adherence to the following procedures.

1. A thorough inspection of the equipment is to be made by the supervisor.
2. The supervisor must confirm the authorized employee who applied the lock-out device is not on campus.
3. The supervisor can remove lock/tag providing they have determined starting up the equipment will not endanger other personnel.
4. The supervisor shall make a reasonable effort to contact the authorized employee who applied the lock to inform them that the device has been removed.

X. LOCKOUT/TAGOUT DEVICE SPECIFICATIONS AND AVAILABILITY

Specifications for lockout and tagout equipment are included in the following list.

1. Lockout and tagout devices, locks and other equipment to implement a lockout/tagout should be, to the extent practical, standardized for the campus and a suitable supply shall be kept available in Maintenance Stores. All locks shall be acquired through the Campus Locksmith. Lockout and tagout devices can be purchased through any appropriate vendor.
2. Tagout devices shall indicate the identity of the employee applying the device(s).
3. All locks will be marked with the identification of the user.
4. Locks for each employee shall be keyed differently and have no master key.
5. Lockout devices must be capable of locking the device in an off position. While in the locked position the lockout device shall not be easy to remove. Lockout devices can range from purchased devices to chains.

XI. TRAINING

Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.

Authorized employees shall be retrained when their job assignment changes, when a change in machines or equipment presents a new hazard, when periodic inspection indicates employees are not properly adhering to the energy control procedure, or when energy control procedures change.

Authorized employees must also be trained about the following limitations for use of tagout devices.

1. Tags are warning devices and do not provide physical protection.
2. Tags may evoke a false sense of security.
3. Tags must be legible and understandable.
4. Tags and their means of attachment must withstand the environment in which they are used.
5. A tag may only be removed with approval of the authorized employee.
6. Tags must be securely attached to prevent accidental detachment.

XII. PERIODIC INSPECTION

Departments/units must conduct at minimum an annual review of lockout/tagout procedure for staff within their department/unit to evaluate understanding and verify correct implementation of procedures. The review must be performed by an authorized employee other than the employee utilizing the procedure or a supervisor, manager or director. The Lockout/Tagout Procedures Verification form (Appendix A) shall be used for this purpose. If the review identifies problems with implementing lockout/tagout procedures, appropriate action shall be taken by the department/unit to correct any inadequacies.

XIII. CONTRACTORS

Contracts and agreements for outside employers performing installation, service or maintenance at UWL require these outside employers to comply with lockout/tagout regulations. If outside employees and UWL employees will jointly perform any task requiring application of lockout/tagout, both parties shall, at minimum, apply the procedures in section VII. Procedure Involving More Than One Person. In lieu of applying section VII requirements, both parties may agree to follow the outside employer's procedures as long as the procedures are compliant with OSHA Standard 29 CFR 1910.147.

XIV. APPROVAL

The UWL Control of Hazardous Energy (Lockout/Tagout) Policy is effective immediately. All UWL employees shall fulfill their responsibilities as designated within this written policy.

Robert J. Hetzel
Vice-Chancellor, Administration and Finance
University of Wisconsin - La Crosse

Date

Appendix A
University of Wisconsin-La Crosse
Lockout/Tagout Procedures Verification

Date of Inspection: _____ **Building Name/Room Number:** _____

Describe Machine/Equipment and Service/Maintenance activities requiring Lockout/Tagout: _____

Authorized Employees Involved in the Lockout/Tagout:

Name Printed

Signature

Name Printed

Signature

Name Printed

Signature

Name Printed

Signature

Name Printed

Signature

Observations:

- | | | |
|---|-----|----|
| 1. Are the steps in the lockout/tagout procedure being followed? | Yes | No |
| 2. Do the authorized employees performing the lockout/tagout understand their responsibilities under the procedure being evaluated? | Yes | No |
| 3. Is the procedure specific enough to provide the necessary protection to safely complete a lockout/tagout? | Yes | No |

List deviations or inadequacies observed: _____

Corrective Actions: _____

Certification: I certify the above inspection was completed and the results communicated with the authorized employees being evaluated. I will submit a copy of this evaluation to the UWL Environmental Health and Safety.

Inspectors Name Printed

Inspectors Signature