

Control of Hazardous Energy (Lock out/tag out) Program

UNIVERSITY OF WISCONSIN-GREEN BAY

This program establishes minimum requirements for the lockout and tagout of energy-isolating devices whenever maintenance or servicing is performed on machinery or equipment. The procedures described in this program will be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources, and locked out and tagged out before employees perform any servicing or maintenance during which unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury. This document follows the requirements of Title 29 of the Code of federal Regulations (CFR), Part 1910.147, the “Control of Hazardous Energy (Lockout/Tagout).”

I. Applicability

This program applies to all UW-Green Bay employees that may perform service or maintenance on equipment that could result in injury from equipment start-up or energization and to employees that may use equipment that is subject to energy control procedures. Only trained employees are allowed to perform lockout and tagout procedures in accordance with this program. Upon observing a machine or piece of equipment that is locked out and tagged out to perform servicing or maintenance, an employee shall not attempt to start, energize or use that machine or equipment.

The following situations are exempt for the requirements of this program:

- Cord-and-plug connected electrical equipment under sole control of the employee performing the service or maintenance
- Hot tap operations involving transmission and distribution systems for gas, steam, water or petroleum products when:
 - They are performed on pressurized pipelines;
 - Continuity of service is essential and shutdown of the system is impractical; and
 - Employees are provided with an alternative type of protection that is equally effective

II. Definitions

Energy-isolating device: a mechanical device that physically prevents the transmission or release of energy

Lockout: placement of a lockout device on an energy-isolating device to ensure that the energy-isolating device and the equipment being controlled cannot be operated until the lockout device is removed

Lockout device: a device that uses appositive means (such as a key or combination lock) to hold an energy-isolating device in a safe position and prevent energizing of a machine or equipment

Tagout: placement of a tag on an energy-isolating device to indicate that the energy-isolating device and the equipment controlled must not be operated until the tag is removed

Tagout device: a prominent warning device (such as an attached tag) that can be securely fastened to an energy-isolating device to indicate that the equipment may not be operated until the tag is removed

III. Responsibilities

Safety manager: develop and maintain this written program which complies with OSHA and DSHS and assist with or arrange for employee training

Supervisors (in conjunction with Director): responsible for determining which activities involving the use of hazardous energy sources are subject to and performed in accordance with the requirements of this program. These responsibilities include:

- Identify all machinery, equipment or processes subject to this program
- Ensure implementation of and compliance with lockout/tagout procedures within their departments. Monitor work tasks requiring lockout/tagout procedures to assure that proper procedures are appropriate and are being followed.
- Ensure department employees are familiar with lockout/tagout procedures and hazards associated with failure to follow proper procedures
- Where applicable, develop and utilize written energy control procedures for each potentially hazardous energy source

Employees: comply with the restrictions and limitations imposed on them during the use of lockout. Employees authorized to lockout machines are required to perform the lockout in accordance with proper lockout procedures. Upon observing a machine or piece of equipment that is locked out for servicing or maintenance, no employee shall attempt to start, energize or use that machine or piece of equipment.

IV. Procedures

This section describes general procedures to follow for machine or equipment lockout/tagout. Whenever feasible, equipment should be locked out. Only when lockout is physically not feasible may tagout be the sole means of energy control.

These procedures apply where the following conditions are all met:

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; and
8. UW – Green Bay has had no accidents involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.

Machines or equipment meeting all the above criteria do not need written procedures but must follow all the general lockout/tagout sequence outlined below. For equipment or machines not meeting the above criteria, written procedures must be developed and followed by the department responsible for maintaining that machine or piece of equipment. The machine or equipment specific procedures shall be maintained in a location that is readily accessible and known to employees.

Lockout/tagout sequence:

1. All affected employees should be notified that servicing is required on a machine or piece of equipment and that the machine or piece of equipment must be shut down and locked out to perform the servicing or maintenance. The notification can be provided verbally or a written notice of intent to lockout for service or maintenance can be posted.
2. The employee conducting the servicing or maintenance shall refer to all available reference materials (including manufacturer's instructions, if available) and information sources to identify the type and magnitude of energy that powers the machine or equipment, shall understand the hazards of each energy source and shall know the methods to control the energy source.
3. If the machine or equipment is currently operating, it must be shut down by the normal stopping procedures.
4. Ensure that the machine or equipment is isolated from all energy sources.

5. Attach lockout devices to all energy isolating devices operated in step 4. In addition, attach a tag bearing the identity of the lockout device and lock owner.

If a tagout device is used in lieu of a lock when the energy isolating device is incapable of lockout, at least one additional safety measure shall be 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. All personnel must be able to understand the hazard warning written on the tags, such as: DO NOT START, DO NOT OPEN, DO NOT CLOSE, DO NOT ENERGIZE, or DO NOT OPERATE.

6. Stored or residual energy (such as that in capacitors, springs, rotating flywheels, hydraulic systems, and air, gas, steam or water pressure lines) must be dissipated or restrained by methods such as grounding, repositioning, or blocking or bleeding as appropriate.
7. The employee conducting the servicing shall verify that the machine is disconnected from the energy source by testing the machine operating controls. All controls shall be returned to the "Neutral" or "Off" position after testing.
8. The machine is now properly locked out and service or repairs can safely begin.

Restoring equipment to service:

When servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken by the employee conducting the servicing:

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 employees that the servicing or maintenance is completed and the machine or equipment is ready to use.

V. Lockout/tagout Procedures involving more than one person

When servicing or maintenance are performed by a group of employees, the group must use a procedures that provides the employees with a level of protection equivalent to that provided by a personal lockout/tagout device. All group lockouts shall have a responsible individual assigned to oversee the procedure.

VI. Transfer of lockout/tagout

Isolation of energy sources must be continued through shift and personnel changes. If the departing employee does not complete servicing or maintenance and return the equipment to service before leaving and the work must continue into the next shift, the lockout device of the departing employee must be replaced with the lockout device of the arriving employee prior to or at the time that the departing employee removes his or her lockout device.

VII. Supervisor removal of locks

Under certain circumstances, it may be necessary to remove a lock left in place by an employee who has departed the building. This shall be done only by the employee's immediate supervisor using the following procedures:

1. Before the lock is removed, a thorough inspection of the equipment will be made by the supervisor responsible for that area.
2. The supervisor must confirm that the employee who applied the lockout device is not at the facility.
3. The supervisor shall remove the lock providing he/she has determined starting up the equipment will not endanger other personnel.
4. The supervisor shall make a reasonable effort to contact the employee who originally applied the lock to inform him/her that the device has been removed. This contact is necessary so that the affected employee would be informed that this has occurred prior to resuming work at the facility.
5. Each time it is necessary to remove/cut a lock, a written report shall be prepared by the supervisor authorizing lock removal. The report should include the type of equipment, justification for lock removal and actions taken to the employee of his/her lock being removed.

VIII. Lockout/tagout devices

UW – Green Bay employees shall have available a supply of locks, fasteners or other hardware for isolating, securing or blocking of machines or equipment from energy sources. The devices shall be marked and identified as energy control devices and shall

not be used for any other purpose. Energy control devices will be standardized through color, shape or size. Each lockout/tagout device shall clearly identify the employee using the device.

IX. Employee Training

Training shall be provided to all employees who may be required to use lockout and tagout procedures. The training shall cover the following topics as mandated in 29CFR 1010.147:

- Types of energy sources anticipated
- Methods of energy isolation and control
- Purpose and use of energy control procedures
- Limitations of tagout

Retraining will be provided any time energy sources or energy control procedures change or upon a change in job duties.

X. Periodic Inspections

Periodic inspections will be conducted by the supervisor (inspector) of the authorized employees performing the lockout/tagout work. This inspection shall include a review between the supervisor and each authorized employee of the employee's responsibilities relative to the energy control procedure being inspected.

XI. Contractors

The requirements and procedures described in this program must be explained (by the campus representative responsible for arranging the work) to contractors who come to campus to perform installations, service and/or maintenance work. Contractors must also inform the campus representative of their own lockout/tagout procedures. The campus representative shall arrange for periodic monitoring of contractor compliance with lockout/tagout program requirements.