



# Middlebury College

## Hazardous Energy Control Program-Lockout/Tagout

### 1.0 Scope

This procedure applies to all Middlebury College employees and contractors who are engaged in the following activities:

- Servicing or maintaining equipment in which unexpected energization could occur,
- Operating equipment that is being serviced or maintained,
- Working in an area where a tagout or lockout system is used, and/or
- Working on or near electrical circuits and equipment.

Energy sources that fall under the Lockout/Tagout program include but are not limited to: electrical, mechanical, hydraulic, pneumatic, chemical or thermal.

This program is written to comply with VOSHA 29 CFR 1910.147 "The Control of Hazardous Energy" which establishes requirements for the control of hazardous energy during the servicing and maintenance of equipment. It is intended to prevent injury to employees and contractors resulting from the unexpected energization or start-up of equipment and/or from stored energy.

EXCEPTIONS: Not covered under this procedure are normal operations unless 1) an employee is required to remove a guard or other safety device or 2) an employee is required to place any part of his/her body into an area of the machine or equipment where he/she could be injured.

Work on cord and plug equipment is not covered by this document if the plug is under the exclusive control of the employee (within his/her vision) performing the servicing or maintenance.

### 2.0 Responsibilities

#### Supervisors

- 1) Ensuring that new employees receive Lockout/Tagout training.
- 2) Ensuring that authorized employees have lockout/tagout devices and that devices are identified.
- 3) Maintaining a list of locks and keys and the names of employees to whom they have been assigned.
- 4) Identifying equipment covered by this standard that must be serviced or maintained by his/her employees.
- 5) Ensuring that specific procedures are developed and updated as required for each piece of equipment maintained or serviced by his/her employees.
- 6) Ensuring that specific energy control procedures are recorded and maintained.
- 7) Ensuring that proper lockout/tagout procedures are followed.
- 8) Ensuring that lockout/tagout devices are not used for any purpose other than lockout/tagout.
- 9) Ensuring that all lockout/tagout devices conform to the facility's standard.
- 10) Removing the lockout and/or tagout device when the authorized employee who applied the device is not available.



## Team Members

- 1) Following the procedures that have been developed for lockout/tagout and ensuring the proper use of equipment.
- 2) Reporting any lost lockout/tagout equipment immediately to their Supervisor.
- 3) Ensuring that their lockout/tagout equipment is not use by anyone else.
- 4) Notifying affected employees before lockout/tagout is performed and then again before energy is restored once servicing or maintenance is completed.

## Environmental Health and Safety

- 1) Developing and maintaining the program required by VOSHA Standard(s).
- 2) Providing guidance on the interpretation of the standard.
- 3) Provide training to ensure compliance with the standard.
- 4) Auditing compliance with the program.

## 3.0 Definitions

### Affected Employee:

An employee whose job requires him/her to 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 or implements a tagout system procedure to the servicing or maintenance on a piece of equipment. An authorized employee and an affected employee may be the same person when the affected employee's duties also include performing maintenance or service on equipment which must be locked out or tagged out.

### 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, a slide gate; a slip blind; a line valve; a block; and any similar device used to block or isolate energy. The term DOES NOT INCLUDE a push button, selector switch, and other control circuit type devices.

### "Capable of being locked out"

An energy-isolating device will be considered to be capable of being locked out either if it is designed with a hasp other attachment or integral part to which, or through which, a lock can be affixed, if it has a locking mechanism built into it. Other energy isolating devices will also be considered to be 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.



## Energy Source

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

## Lockout Device

A device that utilizes a positive means such as lock, either key or type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment.

## Normal Production Operations

The utilization of a machine or equipment to perform its intended production function.

## Servicing and/or Maintenance

Work place 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 machines or equipment and making adjustments or tool changes where the employee may be exposed to the unexpected energization or start-up of the equipment or release of hazardous energy.

## Tagout Device

A prominent warning device, such as a tag and a means of attachment, can be securely fastened to an energy isolating device and the equipment being controlled may not be operated until the Tagout device is removed.

## 4.0 Procedures

### Tag & Lock Requirements

Lockout and tagout devices are standardized for the Middlebury College campus and are NOT TO BE USED FOR ANY PURPOSE OTHER THAN LOCKOUT/TAGOUT.

Heating Plant standardizes LOTO locks by size. All other LOTO locks used are identified by the color red.

Locks and tags are available through your Supervisor. Each authorized employee is responsible for the locks and tags assigned to him/her. Locks must always be accompanied by a standard tag so that the lock will be identified.

All locks will be on the "one lock-one key" rule. Only the individual who is responsible for the lock can have a key to the lock.

Tags must be identified with the name of the authorized employee.

### Use of Locks and Tags

All equipment shall be locked and tagged out to protect against unexpected energization.

NO ONE SHALL ATTEMPT TO OPERATE ANY SWITCH, VALVE OR OTHER ENERGY ISOLATING DEVICE WHEN IT IS LOCKED AND TAGGED OUT.



Each authorized employee, or crew leader if a team is involved, working on equipment applies their own lock/tag to the equipment. NEVER assume protection by working under another person's lock/tag.

When working as a team, refer to Group Lockout section below.

Outside contractors must apply their own locks and tags for the equipment they are servicing or maintaining.

Lockout (vs. tagout) must be used when the energy isolating device is capable of being locked out. The lock should be accompanied by the standard tag which identifies the person who initiated the lockout/tagout.

Tagout (no lock) shall only be used when the energy isolating device is not capable of being locked out. Tags must be fastened securely to the energy isolating device by means substantial enough to prevent inadvertent or accidental removal. TAGS MAY ONLY BE REMOVED BY THE AUTHORIZED EMPLOYEE WHO PLACED THE TAG.

Only authorized employees are permitted to implement a lockout/tagout procedure. Authorized employees must be trained in accordance with the VOSHA standard.

### **New Equipment Requirements**

Any new equipment installed must have an energy isolating device that is capable of being locked out.

### **Equipment Modification**

Whenever major replacement, repair, renovation or modification of machines or equipment is performed, the energy isolating device will be designed/modified to accept a lockout device.

### **Removal of Locks**

It is a serious matter when an authorized employee mistakenly leaves a lock or tag on a piece of equipment and the Supervisor must authorize the removal of the device. There is a potential for injury if the employee resumes the work activity with the belief that his/her lock and/or tag is still in place providing protection.

Each lockout/tagout device shall be removed from each energy isolating device by the authorized employee who applied the lock/tag.

When the authorized employee who applied the lock/tag is not available to remove it, attempts will be made by the Supervisor to contact the employee and request that he/she return to the site to remove the device. If the employee is not available, only the Supervisor may authorize the removal of the device. Lockout/tagout removal under these circumstances may be performed when the following conditions are met:

- \* The Supervisor has verified that the authorized employee who applied the device is not at the facility.
- \* The Supervisor has made all reasonable efforts to contact the authorized employee to tell him/her that his/her lockout device has been removed.
- \* The Supervisor has ensured that the authorized employee has the knowledge that his/her lockout or tagout device has been removed before the employee resumes work.



\* The Supervisor must also be trained as an authorized employee to remove a lockout device.

When the above steps have been completed, the Supervisor may remove the lock/tag or will contact the facilities department to remove the lock.

### **Group Lockout/Tagout**

Multiple locks or tags must be used if more than one employee is working on the equipment. Each authorized employee working on the equipment must apply their own lock/tag and must remove only their own lock/tag when the work is completed. Hasps are available from your Supervisor for group lockout.

When working as a team, a group lock box can be utilized. Each employee is responsible for placing their lock/tag on the box before the job begins and removing their lock/tag only when their portion of the work is complete.

### **Change of Personnel or Shift**

For shift or personnel changes there must be an orderly transfer of lockout tagout devices between the employees and/or contractors.

### **Lockout/Tagout Procedures for Contractors**

Whenever outside contractors will be engaged in activities requiring lockout/tagout, the Project Manager/Supervisor will be responsible for assisting the contractor in implementing standard lockout/tagout procedures. Contractors are responsible for providing their own locks and tags. Locks and tags are available for contractors only on an as needed basis from the Project Manager.

Lockout/tagout procedures for equipment being serviced or maintained by outside contractors must be reviewed with those contractors prior to the work activity.

### **Specific Written Procedures**

When lockout/tagout is required, specific written procedures shall be developed and used for each piece of equipment or each type of equipment (see Appendix A). EXCEPTION: Specific written procedures are not required for a particular piece of equipment only when ALL of the following conditions are met:

- (1) The equipment has no potential for stored or residual energy or accumulation of stored energy after shutdown that could endanger personnel;
- (2) The equipment has a single energy source that can be readily identified and isolated;
- (3) The isolation and locking out of that energy source will completely de-energize and deactivate the equipment;
- (4) The equipment is isolated from that energy source and locked out during service or maintenance;
- (5) A single lockout device will achieve a lockout 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) There have been no accidents involving the unexpected energization of the piece of equipment.



The LOTO Procedure Template found in Appendix A is used to document specific lockout/tagout procedures for each piece of equipment on which it is required.

Authorized employees must know the location of lockout/tagout procedures and following them when performing lockout/tagout on the equipment.

Procedures must be updated to reflect changes in equipment, the method or location of energy isolating devices, energy sources or authorized personnel.

### **Sequence of Lockout or Tagout Procedure**

Refer to the specific written procedure for exact details of the procedure.

The purpose of the lockout/tagout procedure is to ensure that all requirements are met for safe use of equipment that is down for service or maintenance.

- 1) Notify affected employees that lockout/tagout procedure is going to be performed.
- 2) Shut the machine down by normal stopping procedures; i.e. stop button, toggle switch, etc.
- 3) Apply all energy isolating devices to isolate the equipment from all energy sources.
- 4) Lockout and/or tagout the energy isolating device(s) according to the methods documented in the procedure.

NOTE: Be certain to identify proper isolating devices for the equipment being locked out. More than one energy source may be involved. Refer to the specific equipment procedure.

- 5) Verify that all stored energy has been released and/or blocked.
- 6) After ensuring that no personnel are exposed, verify disconnection by attempting to energize the equipment using normal start-up procedures.

CAUTION: Return operating controls to the "OFF" position after the test.

- 7) The equipment is now locked out or tagged out.

### **Restoring the Machine or Equipment to Normal Operation**

After the servicing and/or maintenance is complete and the equipment is ready for normal operation, check for the following.

- \* All employees are clear from the affected area,
- \* The equipment is operationally intact,
- \* Non-essential items (e.g. tools) have been removed, and
- \* All guards have been reinstalled.

Notify affected employees that the lockout/tagout devices will be removed.

Operate the energy isolating device to restore energy.

## **5.0 Training**

The lockout/tagout training program ensures that affected and authorized employees and their Supervisors understand the purpose and function of the Middlebury College Energy Control



Program. The training program ensures authorized employees have the knowledge and skills required for the safe application, use and removal of energy controls.

Retraining will be required whenever there is a change in job assignment, equipment or processes that present a new hazard, or in the energy control procedures.

Additional retraining is also required whenever a periodic inspection of the energy control procedures indicates deficiencies in an employee's knowledge or use of the energy control procedures.

## **6.0 Periodic Inspections**

A periodic inspection of the energy control procedures shall be conducted at least annually. The inspection shall be performed by an authorized employee other than those using the energy control procedure being inspected.

The periodic inspection shall include a review between the inspector and each authorized employee and of the employee's responsibilities under the energy control procedure being inspected.

The LOTO Periodic Inspection Form found in Appendix B is used.

## **7.0 Appendices**

Appendix A – LOTO Checklist

Appendix B – LOTO Periodic Inspection Form

Appendix A

**MIDDLEBURY COLLEGE  
LOCK OUT/TAG OUT PROCEDURES**

**Equipment:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Work Being Done (Notify affected employees):** \_\_\_\_\_

**Shut equipment down using normal stopping procedure.**

**Locate all energy isolation devices (Valves, Electrical Disconnects, etc.) and list below:**

**Energy Isolation Devices:**

**Location:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_

**Method of eliminating/controlling stored energy (i.e. blocking, cribbing, etc.):**

\_\_\_\_\_  
\_\_\_\_\_

**LOTO Performed By:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**LOTO Verified By:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**After service/maintenance is complete and the equipment is ready for normal operation, ensure all employees have been notified and are clear of the affected area and guards have been reinstalled.**

**Equipment Restored By:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Appendix B

**MIDDLEBURY COLLEGE**  
Lockout/Tagout (LOTO) Periodic Inspection Form

**Location:** \_\_\_\_\_ **Supervisor:** \_\_\_\_\_

**Authorized Employee Name(s):**

\_\_\_\_\_  
\_\_\_\_\_

**Performed Lockout/Tagout on the following equipment:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

**Did employees demonstrate a working knowledge of LOTO procedures? Yes or No**  
**If No, please explain:**

\_\_\_\_\_  
\_\_\_\_\_

**Do employees know where to find LOTO procedures (if applicable)? Yes or No**

**Authorized Employee Signature(s):**

\_\_\_\_\_  
\_\_\_\_\_ **Date:** \_\_\_\_\_

**Annual LOTO Audit Conducted By:**

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_