

LOCKOUT/TAGOUT PROCEDURE

EFFECTIVE DATE: 04/00, REVISED: 09/14

1. GENERAL

Serious injuries and deaths occur every year when workers are repairing or servicing machines which are accidentally activated. These machines can be activated by timers, automatic controls, malfunctioning controls or other workers who are not aware that the machines are being serviced. The lockout/tagout regulation addresses this safety hazard which has caused thousands of injuries and approximately 120 deaths each year.

The University is not exempt from this Occupational Safety and Health Administration (OSHA) regulation. All University personnel will comply with these lockout/tagout procedures which control hazardous energy. The preferred method of isolating equipment from energy or power sources is to physically lock the controls in the “off” position. In some cases, this locking procedure is not possible; therefore, warning tags must be placed on the controls while the machine is being serviced.

This written procedure is provided for use in developing lockout/tagout programs which meet the requirements of the OSHA standard. This procedure may be used where there are limited numbers or limited types of machines or where there is a single power source. For more complex systems, a more comprehensive procedure will need to be developed, documented and utilized.

2. PURPOSE

The purpose of this procedure is to establish the minimum requirements for the lockout or tagout of energy isolating devices. It will be used to insure that the machine or equipment is isolated from all potentially hazardous energy, and is locked out or tagged out before employees perform any servicing or maintenance activities where the inadvertent activation of the machine, or its components, could cause injury. Inadvertent activation includes unexpected energization, start-up or release of stored energy from springs, compressed gases, pressurized fluids or elevated parts.

3. RESPONSIBILITY

Employees responsible for servicing and/or maintaining equipment shall be instructed in the safety significance of the lockout/tagout procedure. Each new employee, transferred employee, or other employee whose work operations are or may be in the area, shall be instructed in the purpose and use of the lockout/tagout procedure. New or transferred employees must receive training on the lockout/tagout procedures prior to assignment.

Lockout/tagout devices must be provided by the employer. Lockout/tagout devices must be standardized as to color, size and shape. Each authorized person must be assigned his/her individual lockout devices. Locks must be individually keyed.

It shall be the responsibility of the employees performing the maintenance or repair to implement the lockout/tagout procedure before work begins.

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4. DISCIPLINARY ACTION REQUIRED FOR BY-PASSING LOCKOUT/TAGOUT DEVICES:

The only person authorized to remove the lockout/tagout devices is that person who installed the devices. The purpose of the lockout/tagout procedure is to prevent injuries caused by a machine being activated while someone is servicing or repairing it; therefore, unauthorized removal or by-passing the lockout/tagout device procedure compromises the worker's safety. Any person who by-passes a lockout/tagout device and energizes, starts or otherwise activates a machine or who removes a lockout/tagout device without authorization shall be disciplined according to University policies and procedures. Disciplinary action shall be taken whether or not injury or damage occurs.

5. PREPARATION FOR LOCKOUT/TAGOUT

Make a survey to locate and identify all isolating devices to be certain which switches, valves or other energy isolating devices apply to the equipment to be locked out or tagged out. More than one energy source (electrical, mechanical or others) may be involved.

6. SEQUENCE OF LOCKOUT/TAGOUT SYSTEM PROCEDURE

- A. Notify all affected employees that a lockout or tagout system is going to be utilized and the reason for utilizing the lockout/tagout system. The authorized employee to use the lockout/tagout system shall know the type and magnitude of energy that the machine or equipment utilizes and the hazards that exist with the energy source.
- B. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.).
- C. Operate the switch, valve or other energy isolating device so that the equipment is isolated from its energy source. Stored energy (such as in springs, elevated machine parts, hydraulic pressure, air pressure, rotating flywheels or other types) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down or other appropriate methods.
- D. Lockout/tagout the energy isolating device with assigned individual locks or tags.
- E. After ensuring that no personnel are exposed, and as a check on having disconnected the energy sources, operate the machine's normal operating controls to make certain the equipment will not operate.

CAUTION: Return operating controls to “neutral” or to the “off” position after the test.

- F. The equipment is now locked out or tagged out.

7. RESTORING MACHINES TO NORMAL PRODUCTION OPERATIONS

- A. Remove all tools, loose parts, etc., from the machine.
- B. Replace all guards or shields.
- C. Check the area around the machine or equipment to ensure that no one is exposed to danger after servicing or repairing is completed and that the equipment is ready for normal operation.

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- D. Remove all lockout/tagout devices.
- E. Operate the energy isolating devices to restore energy to the machine or equipment.

8. PROCEDURE INVOLVING MORE THAN ONE PERSON

If more than one person is involved in the service or repair of a machine, each individual shall place his/her personal lockout or tagout device on all energy isolating devices. When an energy isolating device cannot accept multiple locks or tags, a multiple lockout device (a hasp) may be used.

If lockout is used, a single lock may be used to lockout the machine or equipment, but the key to that lock must be placed in a lockout box or cabinet which allows the use of multiple locks to secure it. Each employee will then use his/her own lock to secure the box or cabinet. As each person no longer needs to maintain his/her lockout protection, that person will remove his/her own lock from the lockout device or from the lockout box.

9. PROCEDURE INVOLVING MORE THAN ONE SHIFT OR GROUP OF WORKERS

There may be occasions when a lockout or tagout device must remain in place for more than one work shift or after other personnel changes. The procedure depends on whether or not employees on the incoming shift will be working on the locked out or tagged out equipment.

- A. Service or repair work will be continued by the new shift:

Employees leaving the work place will remove their locks and incoming employees will connect their locks under the direct observation of their supervisors. The supervisors for both shifts will be present for the transfer of the lockout/tagout.

- B. Employees on other shifts will not be working on the machines:

The lockout/tagout devices will remain in place and the incoming personnel will be notified that a lockout/tagout is in effect. The supervisors of both shifts will be responsible for ensuring that the information is made available to the incoming personnel.

10. UPGRADE OF ENERGY ISOLATING DEVICES REQUIRED

Energy isolating devices designed to accept lockout devices must be installed when:

- A. any major replacement, repair, renovation or modification of machines or equipment is performed.
- B. new machines or equipment are installed.

11. CORD AND PLUG CONNECTED ELECTRIC EQUIPMENT

Electric equipment connected by a cord and plug is not covered by the lockout/tagout rules when the cord is under the exclusive control of the person performing the repair or maintenance and the cord is unplugged during servicing.

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12. HOT TAP OPERATIONS

Work involving transmission and distribution systems for substances such as gas, steam, water or petroleum can be performed on pressurized pipeline systems if:

- the employer can demonstrate that the continuity of service is essential.
- shutdown of the system is not practical and documented procedures are followed.
- special equipment is used that will provide effective protection for employees.

13. AUDIT/INSPECTION OF THE LOCKOUT/TAGOUT PROCEDURE

The lockout/tagout program will be audited or inspected on a periodic basis to ensure that the procedure and requirements of the OSHA standard are being followed. Included in the audit will be documentation of review training for employees. Any deviations found in following these procedures will be corrected.

14. QUICK CHECKLIST FOR LOCKOUT/TAGOUT

A. STEPS FOR SHUTDOWN:

- (1) Prepare -- Before you begin, be sure you know:
 - a. all the types of energy involved.
 - b. hazards presented by energy.
 - c. how to control the energy.
- (2) Shutdown -- Turn off the machine or equipment.
- (3) Isolate -- Isolate the machine or equipment from the energy source (i.e., turn off the main circuit breaker).
- (4) Lockout -- Apply your lock. Be sure that it holds the isolating device in the "off" or "safe" position.
- (5) Release -- Release stored energy. Relieve, disconnect, restrain, block, or otherwise ensure that all energy sources (such as electrical, mechanical, hydraulic, compressed, or others) are de-energized.
- (6) Verify -- Try the on-off switch or other controls to be sure the machine will not start. Return the switch to the "off" position.
- (7) Your lockout is complete.

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B. STEPS FOR RESTART:

- (1) Inspect -- Inspect the equipment to be sure that:
 - a. all tools and other material are removed.
 - b. machines are fully reassembled.
 - c. guards and other safety devices are reinstalled.
- (2) Notify -- Be sure that:
 - a. all employees are safely positioned.
 - b. all affected employees are notified of the restart.
- (3) Remove -- Remove lockout devices. Remember that only the person who put the lock on the machine may remove it.

Sample Lockout/Tagout Tag



**DANGER**

LOCK OUT TAG

**DO NOT REMOVE
TAG OR OPERATE**

**EQUIPMENT
LOCKED OUT BY**

Name: _____

Dept: _____

Time: _____

Date: _____

Expected
Completion: _____

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Front



**DANGER**

This energy source
has been
LOCKED OUT!

DO NOT OPERATE

ONLY the person
who signed the
reverse side may
remove this
lock/tag.

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