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POLICY: III: 03- Lockout/Tagout Procedure

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Procedure review: Annually

APPROVED: Executive Director of Facilities and Construction: \_\_\_\_\_

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## I. PURPOSE

This procedure follows [OSHA's Control of Hazardous Energy standard 1910.147](#) and applies to the control of energy during servicing and/or maintenance of machines and equipment. Lockout is the preferred method of isolating fixtures, equipment or machinery from energy sources.

## II. DEFINITIONS

- A. Affected employee - An employee who works in an area where servicing or maintenance operations are performed. An affected employee does not perform servicing or maintenance on machines or equipment and, consequently, is not responsible for implementing lockout/tagout procedures. However, an authorized employee and an affected employee may be the same person when the affected employee's duties also involve performing maintenance or service. An affected employee becomes an authorized employee when he/she performs servicing or maintenance functions.
- B. Authorized employee - An employee who performs servicing or maintenance on equipment and machinery. This employee implements lockout/tagout procedures to guarantee his/her protection.
- C. Capability of being locked out - An energy-isolating device is considered capable of being locked out if it meets one of the following requirements:
  - 1. It is designed with a hasp to which a lock can attach.
  - 2. It is designed with any other integral part through which a lock can be affixed.
  - 3. It has a locking mechanism built into it.
  - 4. It can be locked without dismantling, rebuilding, or replacing the energy-isolating device or permanently altering its energy control capability.
- D. Energized - Equipment and machinery are energized when they are connected to an energy source or contain residual or stored energy.

- E. Energy control policy - A safety skills program intended to prevent the unexpected energization or the release of stored energy in equipment or machinery. The program consists of:
1. Energy control policy.
  2. An employee safety skills-training program.
  3. Periodic inspections of the employees using the policy and a procedure review.
- F. Energy isolating device - A mechanical device that physically prevents the transmission or release of energy.
- G. Energy source - Any source of electrical, mechanical, hydraulic, pneumatic, chemical, steam, thermal or other energy.
- H. Lockout - Placing a lock on an energy-isolating device according to an established procedure that ensures the fixture, equipment or machinery cannot be energized until the lock is removed by the person who placed it there.
- I. Lockout device - A device that utilizes a positive means such as a lock to hold an energy-isolating device in a safe position and prevent the energizing of fixtures, equipment or machinery.
- J. Tagout - The placement of a tagout device on an energy-isolating device, according to an established procedure, clearly marked by means of a tag that states who has the fixture, equipment, or machinery shut down and that the equipment or machinery must not be operated until the tagout device is removed by the employee who placed it there.
- K. Tagout device - Any prominent warning device, such as a tag and a means of attachment that can be securely fastened to an energy-isolating device according to established procedure. The tag indicates the equipment or machinery to which it is attached must not be operated until the tagout device is removed according to the energy control procedure. The attachment method must be substantial and not easily removed.
- L. Zero energy state - Sources of energy have been controlled and/or dissipated.
- M. 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.

### III. RESPONSIBILITIES

- A. Executive Director of Facilities and Construction - Overall responsibility for this procedure.
- B. Director of Engineering and Construction - Responsible to ensure engineering employees are aware of this procedure and are trained in its use and application.
- C. Facilities Management (FM) Managers and Supervisors - Responsible to ensure employees are aware of this procedure and are trained in its use and application.

- D. FM Employees - Responsible for adhering to the lockout/tagout procedures to ensure their safety and the safety of those around them. If violations of this policy are observed, a supervisor or manager should be notified immediately.

#### IV. PROCEDURE

##### A. Basic rules for using lockout or tagout system procedures

1. All energy sources to fixtures, equipment and/or machinery shall be locked out and/or tagged out to protect against accidental or inadvertent operation when such operation could cause injury to personnel.

NOTE: Isolating a piece of equipment from its source may not eliminate all potential hazards. Stored energy may be present within the equipment or machinery.

2. Do not attempt to operate any switch, valve or other energy isolation device when it is locked or tagged out.
3. Never remove a lock or tag for another employee. Only the employee placing the lock or tag may remove it. If there is a need to remove another employee's lock or tag in an emergency, the shop supervisor, with the approval of a manager, may do so after making every effort to contact the owner of the lock or tag.

##### B. Sequence to lockout or tagout:

1. The employee shall make a survey to locate and identify all isolating devices to be certain which switch(s), valve(s) or other energy isolating devices apply to the equipment to be locked or tagged out. More than one energy source (electrical, mechanical or others) may be involved.
2. The employee shall notify all affected employees and customers that a lockout or tagout system will be utilized. The authorized employee shall know the type and magnitude of energy the machine or equipment utilizes and shall understand the hazards.
3. Operate the switch, valve or other energy isolating device(s) to ensure the equipment is isolated from its energy source(s). Stored energy (such as that in spring, elevated machine members, rotating flywheels, hydraulic systems and air, gas, steam and water pressure, etc.) must be dissipated or restrained by methods such as repositioning, double blocking and bleeding down, etc.
4. Lockout and/or tagout the energy isolating devices with assigned individual lock(s) or tag(s). Tags shall indicate the energy-isolated device(s) shall not be operated until after the removal of the tag.
5. After ensuring no employees are exposed, and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate. Return to off position after testing for energization.

6. The equipment is now locked out or tagged out.
- C. Restoring machines or equipment to normal production operations.
1. After servicing and/or maintenance is completed and the fixture, equipment or machinery is ready for normal operation, check the area around the fixture, equipment or machinery to ensure that no one is exposed.
  2. After tools have been removed from the fixture, equipment, or machinery, guards have been reinstalled and employees are in the clear, remove all lockout or tagout devices. Operate the energy isolating devices to restore energy to the fixture, equipment or machinery following the written energy control (startup) procedure.
  3. After lockout/tagout devices have been removed and before a machine or equipment is started, affected employees shall be notified that lockout/tagout devices have been removed and servicing is complete.
- D. Procedure involving more than one person
1. If more than one employee is required to work on equipment or machinery, each employee shall place his/her own personal lockout device and/or tagout device on the energy isolating device(s). When an energy-isolating device cannot accept multiple locks and tags, a multiple lockout or tagout device (box or hasp) may be used.
  2. If lockout is used, a single lock may be used to lockout the machine or equipment with the key being 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 or her lockout protection, that person will remove his/her lock from the box or cabinet.
  3. When work must continue over a shift change, the supervisor or lead technician must ensure employees are aware of which locks are to be replaced or left in place. Employees in the oncoming shift must be informed of the lockout/tagout conditions.
- E. Additional requirements
1. Initial training must be provided for authorized and affected employees, repeated annually and documented. Additional retraining for authorized and affected employees must be provided whenever there is a change in equipment, machinery, procedures or when there is evidence the procedure is being violated.
  2. Locks provided by FM staff are the authorized locks to be used for equipment or machine lockout. Each lock should be keyed separately.
  3. Each lock should be identified as to its owner. In lieu of identification on the lock, an authorized employee's personal tag must be applied in addition to his/her lock when locking out the equipment or machinery so the lock's owner can be readily identified.
  4. The tags, padlocks and lockout devices used for locking out machinery and equipment should only be used for lockout and not for any other activity.

5. Equipment or machinery should be provided with appropriate energy isolating devices. Each such energy-isolating device should be clearly identified by a label. Only where such devices are currently not existent, may tagout be used:
    - a. When equipment or machinery is modified or rebuilt, the energy control device must be altered to allow the incorporation of a lock for lockout purposes.
    - b. When new or replacement equipment or machinery is ordered the specifications shall include the capability of locking out the energy source(s).
  6. The removal of a lock or tag by anyone other than the assigned employee who placed the lock or tag on the equipment or machinery is a serious event and shall be documented. The supervisor should make every effort to locate the responsible employee to be sure he/she is not present on the university, make a thorough examination of machinery or equipment protected by the lockout or tagout to ensure tools, and equipment are clear, and notify a FM manager before removing the lock or tag. Continue to make all reasonable efforts to contact the employee to inform him/her that the lockout or tagout device has been removed and to ensure that the employee has this knowledge before he/she resumes work at the university. See Attachment 1 for lock removal documentation. Attachment 1 must be completed and turned in to the Risk Management Safety Training Coordinator any time a lock is removed by someone other than the employee who originally placed it.
  7. A tagout device, including the means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. Tagout device attachment shall meet the following:
    - a. Be able to be affixed by hand.
    - b. Be non-reusable.
    - c. Be self locking.
    - d. Requires a minimum unlocking strength of 50 pounds.
- F. Cord and plug equipment is exempt from the provisions of this procedure provided that the following two conditions are met.
1. Power to the equipment or machine must be completely removed by unplugging.
  2. The authorized employee must have the plug under his or her exclusive control. If not, the plug must be locked out.

## V. TRAINING

- A. Employees authorized to do maintenance and affected employees (those using or capable of starting a machine or any equipment) shall be trained on lock out/tag out procedures annually.
- B. FM managers and supervisors should annually verify employees are in compliance with the requirements of this procedure. The supervisor or another designated employee shall complete the annual LOTO Inspection/Audit Checklist for employees in their department(s). See

Attachment 2 for documentation. Completed forms are to be turned in to the Risk Management Safety Training Coordinator.

- C. New employees shall be properly trained on this procedure before working in an area where lockout or tagout is in use.
- D. Test results are to be retained by the Risk Management Safety Training Coordinator.
- E. Retraining should take place:
  - 1. When an employee is re-assigned to a different area or machine.
  - 2. When there is a change in the tag and lockout procedure.
  - 3. When there is a change in equipment or machinery.
  - 1. When a periodic inspection or audit reveals inadequacies in the employee's knowledge or use of energy control procedures of this energy control program.



Lockout/Tagout Program Lock Removal Form

<b>General Information:</b>		
Date & time of initial request to remove lock:		Lock owner's department/shop:
Equipment & location:		
Is it absolutely necessary for the equipment to be reenergized before the lock owner can return to remove the lock?    Yes <input type="checkbox"/> No <input type="checkbox"/>		
If "Yes", explain why:		
<b>Reason for removing lock: (i.e. Lock owner called in sick, lock owner forgot to remove lock before leaving site, etc.)</b>		
<b>Document attempts to contact lock owner prior to removal:</b>		
<b>Date &amp; Time</b>	<b>Method of Attempted Contact</b>	<b>Result</b>
<b>Lock Removal:</b>		
<input type="checkbox"/> Verify that the lock will be removed by the supervisor of the lock owner or the supervisor's direct designee.		
<input type="checkbox"/> Verify that the supervisor of the lock owner or the supervisor's direct designee has reviewed the equipment to ensure that it can be safely reenergized.		
Lock removed by:		Date & time of removal:
<b>Notifications:</b>		
<input type="checkbox"/> Verify that lock owner has been informed of lock removal prior to beginning the next shift.		

Lock Owner: \_\_\_\_\_

Lock Owner's Supervisor: \_\_\_\_\_

Departmental Manager: \_\_\_\_\_

Associate Director, Operations: \_\_\_\_\_



### Lockout – Tagout (LOTO)

#### Facilities Management Annual Inspection and Training Assessment Checklist

<b>Employee's Name:</b>	
<b>Shop:</b>	
<b>Location / Equipment:</b>	

		Yes	No
1)	Notify affected personnel (including affected employee).		
2)	Verify location of energy isolating devices, magnitude and type of energy.		
3)	Properly shut down equipment/machine using normal stopping procedures.		
4)	Does the tag used with the lock and hasp identify the worker servicing the machine or equipment?		
5)	Lockout the energy isolating device(s) with assigned individual lock(s).		
6)	Employee effectively releases blocked or stored energy.		
7)	Employee attempts to restart or operate the equipment prior to beginning work.		
<b>PERFORM REPAIRS/MAINTENANCE. PERFORMING MAINTENANCE/REPAIRS IS NOT NECESSARY TO COMPLETE INSPECTION/AUDIT CHECKLIST.</b>			
8)	Ensure all tools and items have been removed.		
9)	Perform lockout removal procedures.		
10)	Confirm that all employees are away from area.		
11)	Verify that controls are in neutral.		
12)	Remove lockout devices and reenergize equipment/machine.		
13)	Notify affected employees that servicing is completed.		
14)	Perform operational test as required.		
15)	Document any at risk procedures, any recommendations, corrective actions or additional training necessary below:		

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

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