



## LAWRENCE UNIVERSITY

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### **Lockout/Tagout Program**

#### **Purpose:**

This procedure establishes Lawrence University's requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment, in accordance with the requirements of OSHA Standard 1910.147. This Program is used whenever service, maintenance, or inspection is performed on machines, equipment, electrical circuits, or systems, it must be done with the machine, equipment, electrical circuit, or system stopped and isolated from all sources of energy or flow of medium. The energy isolation device(s) or isolation valves for that machine, equipment, electrical circuit, or systems must be locked out and tagged out in accordance with a documented procedure.

#### **Responsibility:**

The Safety Director is responsible for the implementation and functioning of the lockout-tagout program. The authorized Lockout-tagout coordinator in charge of the lockout-tagout procedure will be responsible for helping employees locate, lockout, and tag valves, switches, etc. It is the responsibility of the Safety Director to conduct periodic inspections of the lockout-tagout procedures.

When contractor employees are performing work on campus, they must coordinate with Lawrence Facility Services to ensure that no employees are endangered. When a group of employees are performing service, maintenance or inspection activity, each employee must be afforded protection equivalent to the utilization of individual lockout/tagout.

#### **Training:**

Each employee who will be involved in the lockout-tagout procedure must be trained by the Safety Director prior to performing work on any mechanical, electrical system, etc. Any additional employees whose work operation may be in an area where energy control procedures are necessary must receive training. All training must include recognition of hazardous energy sources, types and magnitude of energy, means and methods required for energy isolation and control, and use of locks and tags along with the procedure that will be implemented. All training is to be documented.

#### **Preparation for lockout-tagout procedures:**

The authorized lockout-tagout coordinator will conduct a survey to locate and identify all isolating devices to be certain which switch(es), valve(s) or other energy isolating device(s) apply to the equipment to be locked and tagged out. The lockout-tagout coordinator must

understand the type(s) and magnitude of energy and the hazards of the energy to be controlled.

The lockout-tagout procedure involves, but is not limited to:

- Kinetic energy such as blades, belts, and flywheels.
- Potential energy includes springs, actuators, counterweights, and raised loads.
- Electrical energy involves power transmission lines, transformers, circuit breakers, motors capacitors, etc.
- Hydraulic energy involves lift trucks and cylinders.
- Pneumatic energy involves air under pressure.
- Pressurized liquids and gases, including steam and chemicals present in pipes, supply lines, storage tanks and vessels etc.

### **Lockout-Tagout Restrictions**

Lockout and tag devices must be singularly identified.

Lock and tag devices must be able to withstand use in any kind of environment. It must be ensured that tags used in adverse conditions will not deteriorate, making the message on the tag illegible.

Lockout requirements are not met by just the removal of fuses.

Locks and tags are not to be removed by any other person except the individual who installed the device(s).

Employees cannot rely on another employee's lock and tag device to lock and tag out equipment.

Each employee must verify that the energy source has been de-energized and any potential energy has been released before performing work operations.

### **Lockout/Tagout Equipment**

Lockout/Tagout equipment includes locks, tags, hasps, lockboxes, plug boxes, etc., which are used by employees to properly lockout the energy isolation devices.

### **Multiple Person Lockout**

A lockbox is often used when multiple individuals are required to lockout at several locations on a machine, equipment, electrical circuit, or system. One or two individuals lock out and tag each valve, switch, or breaker and place the keys to these locks in the lockbox along with the specific lockout procedure. All employees lock onto the lockbox including the individuals who locked at each location. The lockbox will be kept in a central location.

### **Removing Locks**

Locks are to only be removed with a key by the person who installed the lock and tag. If someone loses a key or forgets to remove a lock, the lock, chain, or locking device cannot be cut off. The lock has to be removed using the forgotten lock procedure. (See end of this section). THERE ARE NO EXCEPTIONS!!!

## **Lockout/Tagout Procedure**

1. Notify all affected employees that the machines, equipment, electrical circuits, or systems will need to be shutdown and locked out to perform the desired task.
2. Identify all sources of potential energy which will have to be locked out. All flows shall be isolated and lock positions identified. These may include steam, electrical, compressed air, hydraulics, elevated components, etc.
3. If the machine, equipment, electrical circuit, or system is operating, shut it down via normal procedures. (Depress stop button, open switch, close valve, etc.)
4. Isolate all energy sources and apply locks and tags to the appropriate positions to prevent energy from flowing into the machine, equipment, electrical circuit, or system.
5. Stored or residual energy (such as 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.
6. Ensure that the equipment is disconnected from energy source(s) by first checking that no personnel are exposed, and then try to start the machine by normal operating procedure. **CAUTION:** Return operating controls to neutral or OFF position after verifying the isolation of equipment.

## **Restoring to Service**

When the servicing, maintenance, or inspection is complete the machine, equipment, electrical circuit, or system is ready to return to normal operating condition. The following steps shall be taken:

1. Check the machine, equipment or electrical circuit and the immediate area around the machine, equipment or electrical circuit to ensure that nonessential items (including tools and supplies) have been removed and the machine, equipment or electrical circuit components are operationally intact.
2. Check the work area to ensure that all employees have been safely positioned or removed from the area.
3. Verify that the controls are in neutral.
4. Remove the lockout/tagout devices and re-energize the machine, equipment or electrical circuit.
5. Notify affected employees that the servicing, maintenance, or inspection is complete and the machine, equipment or electrical circuit is ready to use.

### Forgotten Lock Removal Procedure

If an employee forgets to remove a lock prior to leaving the facility or jobsite, the following steps must be followed:

1. Determine if it is critical to have the lock removed prior to the employee's next scheduled shift.
2. If it is critical that a lock be removed, follow these steps:
  - a. Contact the employee via cellular phone, home phone, or emergency contact. If the employee is contacted, inform him/her that they must return to the facility or jobsite to remove the lock immediately.
  - b. If the employee is not reached, call the Safety Director to discuss the situation.
  - c. Fill out Checklist below.

Removal Checklist (initial each step when complete)

1. \_\_\_ Verified that no employee is in a danger zone.
2. \_\_\_ Verified that equipment is in operating condition. (tools, etc clear of machine).
3. \_\_\_ Leave employee message to contact Safety Director and job supervisor immediately.
4. \_\_\_ After all of the above have been checked by site supervisor, remove lock and complete below

Signature of person completing this form \_\_\_\_\_

Print Name: \_\_\_\_\_

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

Time: \_\_\_\_\_

Signature of employee who forgot lock \_\_\_\_\_

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

**This form and the cut lock must be returned to the Safety Director ASAP!!!**