

## **Purpose**

This lockout and tagout (LOTO) procedure provides the minimum requirements for the LOTO of energy-isolating devices whenever maintenance or servicing is done on machines or equipment. LOTO shall be used to ensure that the machine or equipment is stopped and isolated from all potentially hazardous energy sources before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could result in employee injuries.

LOTO regulations are published by OSHA in the Construction Industry Regulations (29 CFR 1926.417) and in the Standards for General Industry (29 CFR 1910.147).

Contractors who perform work on university machines or equipment should be properly informed and trained on LOTO procedures. The contractor also should be introduced to any authorized person(s) who have access to LOTO equipment. Contractors will be fully responsible for ensuring their employees comply with individual or group LOTO procedures.

## **Compliance**

All employees and contractors are required to comply with the restrictions and limitations imposed upon them during the use of LOTO. The authorized employees are required to perform the LOTO in accordance with this procedure. All employees, upon observing a machine or equipment that are LOTO to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment.

## **Definitions**

Tagout Device – Any prominent warning device (such as an attached tag) that can be securely fastened to an energy-isolating device in accordance with an established procedure. The tag indicates the machine or equipment to which it is attached is not to be operated until the tagout device is removed by an authorized person (typically the person who installed the tag). A lockout device is preferred to a tagout and should be the method of choice, unless the employer can show that the tagout system provides full employee protection. The tagout device shall be non-reusable.

Lockout Device – A device that uses a physical means of control to hold an energy-isolating device in a safe position, thereby preventing the energizing of machinery or equipment. When properly installed, either a blank flange or a bolted slip blind is considered to be an appropriate lockout device.

Authorized Employee – An employee who has received the proper training and has been authorized by their department to apply LOTO devices when necessary.

## **Energy Source Examples**

- Electrical
- Hydraulic
- Pneumatic
- Chemical
- Thermal
- Mechanical

### **LOTO Devices**

- Durable.
- Substantial enough to minimize early or accidental removal.
- Identifies the authorized person who affixed the device.
- Warning(s) associated with tags (e.g., equipment undergoing service).
- Tags placed at all points where equipment or circuits can potentially be energized.
- Tags placed to plainly identify machine, equipment, or circuits being worked on.

### **Sequence of LOTO**

- Notify all affected employees that servicing or maintenance is required on a machine or equipment and the machine or equipment must be shut down and isolated using LOTO.
- Name(s) and job title(s) of affected employees and notification process.
- The authorized employee shall refer to the department procedure to identify the type and magnitude of the energy that the machine or equipment utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.
- If the machine or equipment is operating, shut it down by the normal stopping procedure.
- Deactivate the energy so the machine or equipment is isolated from the energy source.
- LOTO the energy isolating device(s) with assigned individual lock(s) and tag(s).
- Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, air, gas, steam, pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.
- Ensure the equipment is disconnected from the energy source(s) by checking that no personnel are exposed and verifying the isolation of the equipment by operating the push button or other normal operating control or by testing to make certain the equipment will not operate.
- CAUTION: Return operating control(s) to neutral or "off" position after verifying the isolation of the equipment.
- The machine or equipment should now be isolated under the LOTO process.

### **Restoring Equipment or Machine to Service**

- Check the machine or equipment and the immediate area around the machine or equipment to ensure that nonessential items are removed and the machine or equipment components are operationally intact.
- Check the work area to ensure that all employees have been safely positioned or removed from the area.
- Verify the controls are in their neutral position
- Remove the LOTO device(s) and reenergize the machine or equipment
- Notify affected employees that the servicing or maintenance has been completed and the machine or equipment is ready for use.