

**University of Arkansas**  
**Office of Environmental Health and Safety**

**Procedure Name: Lockout / Tagout**

**Procedure Number: 600.26**

**Effective Date: 12-1-2015**

**Procedure:**

Developed in accordance with the OSHA Control of Hazardous Energy (Lockout/Tagout) Standard, 29 CFR 1910.147.

**Purpose:**

This procedure outlines techniques to be utilized by UA employees on a daily basis to guard against the accidental release of energy or unexpected start-up of machines or equipment while they are being serviced or maintained. An energy-isolating device is used along with a lock or tag, to ensure that the device is not operating during service or maintenance. The failure to control hazardous energy can cause disabling injuries and death from unexpected start-ups and electrical shock. Hazardous energy sources covered by this procedure include:

- Electrical
- Mechanical
- Pneumatic
- Thermal
- Fluid and Gases
- Hydraulic

**Definitions:**

**Affected Employee.** An employee whose job requires him/her to operate 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 servicing or maintenance is being performed.

**Authorized Employee.** A person who locks out or tags out machines or equipment in order to perform maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing maintenance on that equipment.

**Energy-Isolation devices.** A mechanical device that physically prevents the transmission or release of energy. The following are examples of ways to energy-isolate a device: A manually operated electrical circuit breaker; a disconnect switch; pull a plug; remove a fuse; close a valve; bleed a line; a block; or any similar device used to block or isolate energy.

**Lockout.** The placement of a lockout device on an energy-isolating device, in accordance with an established procedure, ensuring that the energy-isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

**Lockout Device.** A device that utilizes a positive means, such as a lock to hold an energy-isolating device in the safe position and prevent the energizing of a machine or piece of equipment.

**Tagout.** Tagout involves placing a tag on the energy-isolating device. In tagout, the tag acts as a warning not to restore energy. However, a tag does not actually prevent operation (as a lock does) and is therefore less secure. Tags must clearly state **Do Not Start or Do Not Operate** until tagout device is removed. All tags shall meet the requirements of 29 CFR 1910.147(c) (5) (ii) and (iii). All employees shall be trained in use and limitations of tags as described in 29 CFR 1910.147(c) (7) (ii) and (d) (4) (iii).

### **Rules:**

Locks, chains, wedges or other hardware shall meet the requirements defined in 29 CFR 1910.147(c) (5) (ii)

Lockout devices shall be singularly identified. They shall be the only devices used for controlling energy and shall not be used for other purposes.

The lockout devices shall indicate the identity of the employee applying the devices.

All machines/equipment shall be locked out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Lockout will also apply when working on or near exposed deenergized electrical circuits / parts.

No employee shall attempt to operate any switch, valve, or other energy- isolating device which is locked out.

Each lockout device shall only be removed by the employee who applied the device. See Removal of Lockout Devices (Exception)

### **Training:**

The department heads, supervisors, or there designated representatives shall ensure that employees under their supervision receive training in the contents of this procedure and ensure records of this training are maintained.

Each **authorized employee** shall receive training in the recognition of hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods, devices, and procedures used to lockout, verify lockout and the methods and means necessary for energy isolation and control.

Transfer of lockout responsibilities

Procedures for removing locks and returning a machine or piece of equipment to operation.

Each **affected employee** shall receive training in the purpose and use of the Lockout-Tagout procedure and the importance of not attempting to start up or use machines / equipment that has been locked out.

Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignment that exposes them to new hazards. Whenever deficiencies are noted. Refresher training shall be conducted annually as a minimum.

### **Lockout Procedure and Techniques:**

#### Preparation for shutdown

1. In preparation for lockout, an initial survey must be made to locate and identify all energy isolating devices to be certain which switch, valve, or other energy isolating devices apply to the machine / equipment to be locked out. More than one energy source (electrical, hydraulic, pneumatic, chemical, thermal, or others) may be involved. Obtain a copy of the online **LOTO PROCEDURE CHECKSHEET** to be completed during the LOTO Operation. ( Appendix A )
2. Before an authorized or affected employee turns off a machine or piece of equipment, the employee must have knowledge of the type and magnitude of the energy to be controlled, and the methods or means to control the energy.

Note: If work to be performed involves employees working on or near exposed deenergized electrical parts, (See 29 CFR 1910.333).

#### Machine or Equipment shutdown

1. All affected employees shall be notified that a lockout system is to be utilized and the reason for it, before the controls are applied.
2. If the machine or equipment is operating, shut it down by normal stopping procedure. (Depress stop button, open toggle switch, etc.)

#### Machine or Equipment Isolation

Physically locate and operate the switch, valve, or other isolating devices so that the equipment is isolated from its energy sources and apply adequate hardware (locks, tags etc.

#### Lockout Device Application

1. Authorized employees shall lockout the energy isolating devices with assigned individual locks.

2. Lockout devices shall be applied so that they will hold the energy isolating devices in a “Neutral” or “off” position.

### Stored Energy

All stored or residual energy in rams, flywheels, springs, pneumatic, or hydraulic systems, etc. shall be blocked or dissipated. If there is a possibility of reaccumulation of stored energy, verification of isolation must be continued until servicing or maintenance is completed.

### Verification of Isolation

Prior to starting work on machines or equipment that have been locked and after ensuring that no personnel are exposed, the authorized employee shall operate the push button or normal operating controls to verify that the designated equipment or machine has been deenergized and make certain it will not operate.

**CAUTION:** Return operating controls to the “Neutral” or “Off” position after the test

**The machine / equipment is now locked out. Servicing may now occur.**

### Removal of Lockout Devices

Before lockout or tagout devices are removed and energy is restored to the machine or equipment the authorized employee shall ensure the following:

Machine or Equipment. The work area shall be inspected to ensure that nonessential items have been removed and that machine / equipment components are operationally intact.

Employees. The work area shall be checked to ensure that all employees have been safely removed or positioned. Before lockout or tagout devices are removed and before machines or equipment are energized, affected employees shall be notified.

Each lockout or tagout device shall be removed from each energy-isolation device by the employee who applied the device.

**Exception:** When the authorized employee who applied the lockout or tagout device (installer) is not available to remove it, that device may be removed under the direction of the original installer’s immediate supervisor after the following conditions are met:

Verification by the immediate supervisor that the employee who applied the device is not at the facility

Making sure all reasonable efforts to contact the original installer to inform them that his/her lockout or tagout device has been removed

Ensuring that the original installer has this knowledge before they resume work at the facility.

### **Additional requirements**

Group lockout or tagout. When servicing and/or maintenance is performed by a crew or department, they shall utilize a system that affords their employees a level of protection equivalent to that provided by the implementation of a personal lockout or tag out device. This shall be accomplished by:

1. The application of a multi-lock accepting device by the primary authorized employee to the energy-isolating device.
2. The primary authorized employee attaching his/her lock to the multi-accepting device.
3. Each authorized employee shall affix a personal lockout or tagout device to the multi-lock accepting device when they begin work, and shall remove those devices when their work is complete.
4. The primary authorized employee removing his/her lock and the multi-lock accepting device when all service or maintenance has been completed.

Shift or personnel changes. If a lockout procedure will extend into the following shift, the authorized employee who originally placed the lock will remove it and it will immediately be replaced with the lock of the authorized employee who is to continue the repair or maintenance on that equipment or machine for the following shift.

Outside Contractors. Whenever outside contractors are to be engaged in the activities covered by this procedure, the designated UA representative and the outside contractor shall inform each other of their respective lockout/ tagout procedures. The designated UA representative shall ensure that his/her personnel understand and comply with the outside contractor's energy control procedure. If the outside contractor has no documented lockout/tagout procedure, they shall ensure that their personnel understand and comply with this procedure.

Source: Environmental Health and Safety

Revised:

Approved By: MKL

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