

## Goal

This program provides assistance in the development of a lockout/tagout program

## Objective

The employee will be able to identify the six steps involved in proper lockout/tagout procedure.

## Definitions

**Lockout** – the placement of a lockout device on an energy-isolating device, in accordance with an established procedure, which ensures that the isolating device and the equipment under control cannot be operated

**Tagout** – the placement of a tagout device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device has been removed

**Authorized Employee** – a person that locks out or tags out machines or equipment in order to perform maintenance or service on that machine or equipment

**Affected Employee** – an employee whose job requires him or her to operate or use a machine or piece of equipment on which service or maintenance is being performed under lockout or tagout, or whose job requires him or her to work in an area in which such activities are being performed

**Energy Isolating Device** – a mechanical device that physically prevents the transmission or release of energy (e.g., manually operated circuit breaker, disconnected switch, a block, a line valve, etc.)

## Procedures for Lockout/Tagout



Follow these six simple steps to prevent accidents during repair or maintenance operations on equipment:

1. **Preparation for shutdown.** Plan the entire procedure before putting it into

operation to ensure maximum safety. The employee authorized to turn off machinery or equipment must know:

- The type and magnitude of the energy related to the equipment
- The hazards associated with the energy present
- The method or means to control the energy

2. **Shut down the equipment.** Use the manufacturer's or employer's established procedures only. Orderly shutdown prevents unexpected hazards.

3. **Isolate the equipment.** Locate all sources of energy and turn them off. These include:

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

Any of these can cause serious injury or death when not properly locked out.

4. **Apply lockout/tagout devices.** Physically lockout all identified power sources. Remember – pulling a fuse or flipping a circuit breaker is no substitute for locking out.

5. **Control stored energy.** Ensure that all stored energy has been eliminated from the system. The following actions can be taken:

- Visually confirm that all moving parts have stopped
- Relieve all trapped pressure
- Blank pipe flanges
- Install ground wires to discharge electrical capacitors
- Block or support elevated equipment

6. **Verify isolation of equipment.** Take the following measures to verify that all equipment is no longer functional:

- Press all operating controls to ensure there is no power
- Return power switches to the "OFF" position
- Inform everyone in the area before working on equipment

Periodically re-verify the power is off while performing maintenance or repair. Once repair or maintenance is complete, release procedures can be taken

## Procedures for Release from Lockout/Tagout

Before removing any lockout or tagout devices, or restoring energy to machines, procedures to ensure the following must be in place:

1. **Machine or equipment** – inspect area to ensure that nonessential items have been removed and that the machinery is operationally intact with all guards in place
2. **Employees** – ensure all employees have been safely positioned or removed from the area
3. **Removal** – Only the person who applied the lockout/tagout device may remove it

## Review

1. Which of the following examples of energy would need to be locked out?
  - a. Chemical
  - b. Electrical
  - c. Stored
  - d. All of the above
2. Who should be responsible for locking or tagging equipment for maintenance or repair?
  - a. The supervisor
  - b. The equipment operator
  - c. The person performing the maintenance or repair work
  - d. An OSHA inspector
3. Planning for the shutdown of equipment for repair or maintenance will ensure:
  - a. All energy sources are found and isolated
  - b. The repair or maintenance will be done as efficiently as possible
  - c. All affected persons are notified of the impending work
  - d. All of the above
4. Pulling a fuse provides as much protection as locking out a piece of equipment  
True/False
5. What should be done during the actual maintenance or repair to ensure that the work environment is still safe?
  - a. Routinely verify that energy to machine is turned off
  - b. Having plenty of coffee breaks
  - c. Constant communication with plant manager
  - d. Leaving tools throughout equipment while working

## Answers

1. D
2. C
3. D
4. False – pulling a fuse does not afford the same protection as having a lock on that energy source. Without a lock or tag, someone could still turn on the equipment. The best protection is a locking device with a tag identifying who is performing the work placed on the equipment
5. A



For more information on lockout/tagout and other topics see the Service Lloyds website. In Risk Control's Training Materials section, we have additional resources including:

- Lockout/Tagout Program + Quiz – Sample Safety Program
- Electric Shock – Toolbox Talk
- Electrical Safety
- Parlay Handouts:
  - Working Safely with Electricity
  - Responding to an Electrical Emergency

Remember to practice Safety; don't learn it by accident.

For additional assistance, please contact  
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