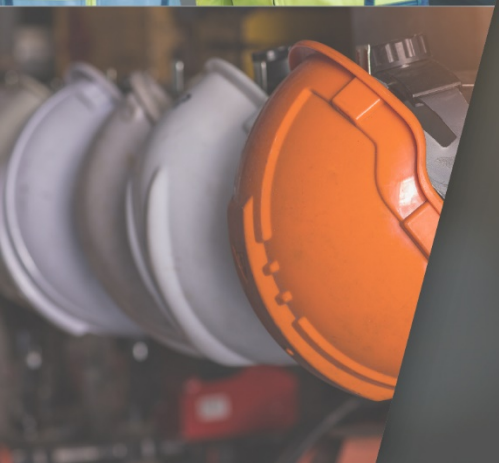

COTTINGHAM & BUTLER

# RISK MANAGEMENT SAFETY WEBINAR

## Control of Hazardous Energy (Lockout/Tagout)

(Reference OSHA Standard 1910.147)

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# LEARNING OBJECTIVES

This class is designed to give you the knowledge to:

- Review the proper components of a written policy,
- Discover how to develop machine-specific procedures/alternate procesures
- Identify employee training requirements, and
- Learn how to conduct the annual OSHA required periodic audit.

# POLL

**What does your current lockout/tagout program (LOTO) look like:**

A. No Lockout/Tagout Program

B. Written program only

C. Written program, training, periodic inspection

D. Written program, training, periodic inspection and machine specific LOTO procedures

# DO YOU NEED A LOCKOUT/TAGOUT PROGRAM?

Employers must establish a Lockout/Tagout program to ensure that authorized employees shut down and isolate machines from their energy sources and render them inoperative before any employee services or maintains them.

At a minimum, a compliant Lockout/Tagout program consists of:

- A written Lockout/Tagout (LOTO) program
- Energy control procedures
- Employee training
- Periodic inspections

# LOCKOUT/TAGOUT PROGRAM REQUIREMENTS

Workers doing service or maintenance activities during normal production operations must follow lockout/tagout procedures if they:

- Remove or bypass machine guards or other safety devices.
- Place any part of their bodies in or near a machine's point of operation.
- Place any part of their bodies in a danger zone associated with machine operations.

# EXCEPTION TO LOCKOUT

Minor tool changes and adjustments, and other minor servicing activities. Not covered if they are routine or repetitive. ***Provided that the work is performed using alternative measures which provide effective protection.***

# SERVICING AND/OR MAINTENANCE

Servicing and/or maintenance includes activities such as:

- Constructing
- Installing
- Setting up
- Adjusting
- Inspecting
- Modifying
- Maintaining and/or servicing machines or equipment

# SERVICING AND/OR MAINTENANCE

Servicing and/or maintenance include activities such as:

- Lubrication
- Cleaning or un-jamming of machines or equipment
- 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

# LOCKOUT DOES NOT APPLY TO….

Work on cord and plug connected electric equipment when the start-up of the equipment is:

- Controlled by the unplugging of the equipment from the energy source
- Plug under the exclusive control of the employee performing the servicing or maintenance
- Hot-tap operations

# GENERAL REQUIREMENTS

Employer must establish a comprehensive lockout program consisting of:

- A written LOTO safety program
- Energy control procedures
- Employee training
- Periodic inspections

# LOCKOUT/TAGOUT WRITTEN SAFETY PROGRAM

Employers are required to develop a written program outlining the:

- Scope
- Purpose
- Authorization
- Rules and techniques that employees will use to control hazardous energy sources
- As well as the means that will be used to enforce compliance

# LOCKOUT/TAGOUT WRITTEN SAFETY PROGRAM

## LOCKOUT/TAGOUT POLICY

### Introduction

Whenever servicing or maintenance is performed on equipment or machines where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury, the authorized employees are required to follow the lockout procedures explained in this policy to ensure that a zero energy states exists.

This not only applies to electricity, but also to valves controlling pneumatic, hydraulic, and other lines, such as chemical, water, and steam.

### Lockout Devices

A key-operated padlock is to be issued to each person expected to lockout equipment along with a multiple-hole lockout device when there is a possibility of more than one person locking out equipment.

When valves are locked out, the employee is to use the proper valve lockout device that fits over the particular valve, such as a ball valve, globe, or gate valve.

Key/Lock Control: Duplicate keys are to be kept locked up with access limited to the employee's

# POLL

**When are you NOT required to lock a machine out:**

A. Inspecting machine after removing guards

B. Lubricating machine in a position that does not expose you to machine hazards

C. Bypassing a guard and clearing a jam

D. Reaching over, through, or under guard to clean a machine when the machine is turned off

# ENERGY CONTROL PROCEDURES

Employers must develop, document, and use procedures to control potentially hazardous energy. The procedures explain what employees must know to control hazardous energy effectively when they service or maintain machinery.

# ENERGY CONTROL PROCEDURES

Before beginning service or maintenance, the following steps must be accomplished in sequence to properly perform Lockout/Tagout:

- Notification
- Prepare for shutdown
- Shut down the machine
- Isolate energy sources
- Apply locks & tags
- Control residual energy
- Verify energy control methods

# SAMPLE LOCKOUT PROCEDURE

*LOCKOUT/TAGOUT PROCEDURES*

[COMPANY NAME]

*# Energy Sources*

| ID: | Location: | Date: |
|---|---|---|
| Description: | | |

| DE-ENERGIZING PROCEDURE: | |
|---|---|
| Step 1 | Notify affected employees that the energy control procedure is being applied. |
| Step 2 | Shut down the machine by following the normal stopping procedure. |
| Step 3 | Lockout/tagout energy sources by: |

| | | |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

| LEGEND: | Electrical | Pneumatic | Water |
|---|---|---|---|
| | Gas | Hydraulic | Other |

*NOTE: Power must be locked out on the pressure side/line of the equipment. Never lockout on the return side.*

# ALTERNATE PROCEDURES

Situations where lockout may not best fit a specific set of tasks.

- Must document potential risks and control measures to protect employees when energy must be present.
- Can include partial lock out procedures and involve special precautions
- Use Hierarchy of Controls

# RELEASE FROM LOCKOUT/TAGOUT

When servicing or maintenance is completed or when Lockout/Tagout devices must be temporarily removed, the equipment requires testing and the machine or equipment is ready for testing or to return to normal operating conditions.

# REMOVING A LOCKOUT DEVICE

The authorized employee who applied the lock shall be the one to remove their lock. However, after all work has been completed, certain conditions may arise which prohibit this person from being present to remove the lock.

Thus, it is extremely important that all employees respect lockout and that only the person who applies a lock should remove it.

# LOCKOUT/TAGOUT EQUIPMENT

When lockout/tagout devices are used, they must be the only devices the employer uses in conjunction with energy-isolating devices to control hazardous energy.

A key-operated padlock is to be issued to each person expected to lockout equipment, along with a multiple-hole lockout device (hasp) when there is a possibility of more than one person locking out equipment.

When valves are locked out, the employee is to use the proper valve lockout device that fits over the particular valve, such as a ball valve, globe, or gate valve.

# LOCKOUT/TAGOUT EQUIPMENT

In addition, lockout/tagout devices must be:

- Durable enough to withstand workplace conditions (acids, water, etc.)
- Standardized according to color, shape, or size
- Tagout devices must also be standardized according to print and format. Tags must be legible and understandable by all employees and include warnings such as : “Do Not Start,” “Do Not Open,” “Do Not Close,” “Do Not Energize,” or “Do Not Operate.”

# LOCKOUT/TAGOUT EQUIPMENT

In addition, lockout/tagout devices must be:

- Substantial enough to minimize the likelihood of premature or accidental removal. Employees should be able to remove locks only by using excessive force with special tools, such as bolt cutters.
- Labeled to identify the specific employees authorized to apply and remove them.

# LOCKOUT/TAGOUT TRAINING

Training must ensure that employees understand the purpose, function, and restrictions of the energy-control program. Employers must provide training specific to the needs of “authorized,” “affected,” and “other” employees.

# AUTHORIZED EMPLOYEE TRAINING

"Authorized" employees are those responsible for performing lockout/tagout. They need the knowledge and skills necessary for the safe application, use, and removal of energy-isolating devices. They also need training in the following:

- Hazardous energy source recognition
- The type and magnitude of the hazardous energy sources in the workplace
- Energy-control procedures, including the methods and means to isolate and control those energy sources

# AFFECTED EMPLOYEE TRAINING

Generally machine operators, are those employees who operate the relevant machinery or whose jobs require them to be in the area where service or maintenance is performed. These employees do not service or maintain machinery or perform lockout/tagout.

# AFFECTED EMPLOYEE TRAINING

Affected employees must receive training in the purpose and use of lockout procedures. They also need to be able to do the following:

- Recognize when the energy-control procedure is being used
- Understand the purpose of the procedure
- Understand the importance of not tampering with lockout devices and not starting or using equipment that has been locked or tagged out

# WHEN IS TRAINING REQUIRED?

Training for all Authorized, Affected, and all other employees must be provided initially upon hire and prior to starting service and maintenance activities.

Training must be documented. Training documentation must include each employee's name and dates of training.

# RETRAINING

Employers must provide retraining for all authorized and affected employees whenever there is a change in the following:

- Job assignments
- Machinery or processes that present a new hazard
- Energy-control procedures

# RETRAINING

Retraining also is necessary whenever a periodic inspection reveals, or an employer has reason to believe, that shortcomings exist in an employee's knowledge or use of the lockout/tagout procedure.

# POLL

**Which step is NOT included in the procedures to properly lock a piece of equipment out:**

A. Verify lockout was effective

B. Disengage machine interlocks

C. Shut down machine

D. Notify all affected employees

# PERIODIC INSPECTIONS

Employees are required to review their procedures at least once a year to ensure that they provide adequate worker protection. This review is more formally termed a “Periodic Inspection.”

As part of the review, employers must correct any deviations and inadequacies identified in the energy-control procedure or its application.

The periodic inspection is intended to assure that employees are familiar with their responsibilities under the procedure and continue to implement energy-control procedures properly.

# PERIODIC INSPECTIONS

The inspector, who must be an authorized person not involved in using the particular control procedure being inspected, must be able to determine the following:

- Employees are following steps in the energy-control procedure
- Employees involved know their responsibilities under the procedure
- The procedure is adequate to provide the necessary protection, and what changes, if any, are needed

# PERIODIC INSPECTIONS

Periodic Inspections must be documented and maintained. The certification must specify the following:

- Machine or equipment on which the energy-control procedure was used
- Date of the inspection
- Names of employees included in the inspection
- Name of the person who performed the inspection

# PERIODIC INSPECTIONS

Lockout/Tagout procedures must be separately inspected to ensure that the procedure is adequate and is being properly implemented by the authorized employee in accordance with the LOTO standard.

Each LOTO procedure inspection must include a demonstration (hands-on evaluation) of the procedures and must be performed while the authorized employee(s) perform servicing and/or maintenance activities on machines or equipment. ***1910.147(c)(6)(i)(C)*** *Where lockout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.*

The inspections may be accomplished through random audits, plant safety tours, or planned visual observations.

# PERIODIC INSPECTIONS

Machines and equipment may be grouped together in one LOTO procedure if they all are listed or identified in the scope of the energy control procedure and if they all have the same or similar:

- Procedural steps for shutting down, isolating, blocking, securing, and dissipating stored energy in machines or equipment.
- Procedural steps for the placement, removal, and transfer of the lockout or Tagout devices and the responsibility for them.
- Requirements for testing a machine or equipment to determine and verify the effectiveness of LOTO devices and other control measures.

# PERIODIC INSPECTIONS

As an example:

Employer A has 20 power presses that are substantially similar. Employer A can develop a single, written LOTO procedure to cover all 20 of the presses. Therefore, they only have to conduct an inspection of that one procedure, as opposed to conducting 20 separate procedure inspections.

# SUMMARY

- Establish LOTO procedures
- Train employees on the LOTO program, including the safe application, use, and removal of energy controls
- Inspect these procedures periodically (at least annually) to ensure that they are being followed and that they remain effective in preventing the unexpected release of hazardous energy

# Questions?

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