



Introduction

Lockout/tagout refers to procedures that prevent the release of stored energy or the unexpected startup of machinery or equipment when performing service or maintenance. During normal production we are protected from machinery and equipment by guards or enclosures. However, when we open or remove these guards or enclosures, we expose ourselves to hazardous energy that can cause severe injuries or even death.

This safety talk is for those employees who require a basic understanding of the lockout/tagout program. It is not for authorized employees who will perform lockout/tagout.

The Occupation Safety and Health Administration (OSHA) requires lockout/tagout programs to ensure the safety of employees when performing service and maintenance on machines or equipment. This safety talk follows OSHA's standards in Title 29, CFR Part 1910.147, The control of hazardous energy (lockout/tagout), and 1910.333, Working on or near exposed deenergized parts. In addition, consensus standards, such as NFPA 70E and ANSI Z244.1, provide up-to-date guidance.

Definitions

Authorized employee

This person locks out or tags out machines or equipment to perform service or maintenance.

Affected employee

This person operates or uses a machine or equipment or works in the area on which service or maintenance is happening under lockout/tagout but does not actually perform service or maintenance.

Other employee

This person's job responsibilities are not directly affected, and they do not work in the area on which the service and maintenance is happening under lockout/tagout.

Service or maintenance

Activities for repairing, replacing parts, or maintaining machines or equipment such as constructing, installing, adjusting, modifying, lubrication, cleaning, unjamming, or tool changes where the employee may be exposed to injury from the unexpected startup or the release of hazardous energy from the machine or equipment.

Energy isolation device

A mechanical device that physically prevents the transmission or release of energy. Examples include circuit breakers, disconnect switches, line valves, and physical blocks. Energy isolation devices do not include motor circuit control devices, such as e-stop buttons, interlock switches on guards or light curtains, and on/off switches.

Lockout device

A not easily removed device, such as a lock, that holds an energy isolation device in a safe position by positive means.

Tagout device

An easily removed warning device, such as a tag, attached to an energy isolation device, informing of service or maintenance activities.

Discussion

Service and maintenance activities

- Using the definitions above, discuss service and maintenance activities that occur at your facility.
- Discuss who is authorized to lockout/tagout machines or equipment. Emphasize that each person performing maintenance must have the equipment locked out with their own lockout device.
- Review who is not authorized to perform service and maintenance on locked out equipment. Give clear examples of when someone may try to bypass a guard to perform an activity, such as removing a stuck part, and explain why that violates your lockout/tagout policy.
- If you allow minor service and maintenance at your facility without lockout during normal production, then explain:
 - o Which machines and equipment this occurs on.
 - o What minor servicing activities are permissible.
 - o How you provide employees equivalent protection to lockout during the permissible minor service activities.

Hazardous energy sources

- Ask your employees to name hazardous energy sources. Use the list below to ensure you cover all the energy sources at your facility (including less obvious sources such as counterweights, torsion springs, or capacitors).
- Discuss the magnitude of your energy sources and how magnitude impacts risk. For example, a 3-phase 480 voltage circuit has a much higher risk of serious injury or property damage compared to a single-phase 120 voltage circuit.

Examples of energy sources

- Electrical – disconnect switches, breakers, capacitors with stored energy, etc.
- Mechanical – any parts that move (i.e., rams, fly wheels, spinning blades, pulleys, etc.)
- Hydraulic – hydraulic lines, cylinders, etc.
- Pneumatic – compressed air
- Chemical – corrosive materials, acids, bases
- Thermal – steam, hot fluids, furnaces
- Gravity – press dies/rams, overhead doors

Lockout /tagout and energy isolating devices

- Using the definitions above, discuss and review the various energy isolation devices at your facility.
- Discuss whether you use lockout devices only or whether you also use tagout devices (and why).
- Explain who gets lockout/tagout devices.
- Show and display your lockout/tagout devices. Your employees must be able to recognize your lockout/tagout devices.
- Explain how you find who the lockout device belongs to.
- Explain how you ensure the owner of the lockout device has exclusive control.
- Explain who may remove lockout devices.
- Describe what affected employees and other employees are to do when they see a locked-out machine or piece of equipment.
- Explain that authorized employees are to announce to all affected employees before they lock out a machine or piece of equipment for service and then again notify affected employees before they bring the machine or equipment back up for use.
- Using your policy describe all expectations and consequences for not following your lockout/tagout program.

Energy-control procedures

- Describe the purpose of lockout/tagout procedures.
- Explain how you develop procedures and whether affected employees help develop procedures.
- Explain who may perform the lockout/tagout procedures.
- Review a simple lockout/tagout procedure and include notification steps and verification steps.
- Describe any and all methods used to barricade a machine during maintenance activities.
- Review any special circumstances or procedures for when contractors supply service and maintenance of machines or equipment at your facility.
- Discuss your schedule and methods for periodically reviewing the lockout/tagout procedures.

Training and retraining

- Describe the training for each type of employee (authorized, affected, and other) and when retraining is needed.
- Reiterate your discipline procedures for not following the lockout/tagout policy. If you have a zero-tolerance policy for anyone that tampers with a locked-out machine, make this clear during the training.

Conclusion

This safety talk is for those employees who require a basic understanding of the lockout/tagout program. It is not for authorized employees who will perform lockout/tagout.

As with any training, document your talk. Documentation should include the date of the talk, who lead the talk, an outline of the talk, and the names of all employees who took part and received training.

Group activities

1. Gather the group at a safe distance from operating equipment/machinery. Ask them to find all energy sources. Compare their answers with the specific lockout procedure for that equipment. Then, ask them what hazards someone would be exposed to without following the procedure.
2. Using photographs of machines/equipment at the facility, have the group name the hazardous energy sources, then discuss how you guard against hazards during normal production versus control during service and maintenance.

Resources

[OSHA Lockout/Tagout Website](#)

[OSHA Lockout/Tagout Training E-tool](#)

Lockout/Tagout Fact Sheet(2002) ([English](#) · [Spanish](#))

Lockout/Tagout: Control of Hazardous Energy Lockout-Tagout

[\(OSHA 3120 - 2002\)](#)

[NFPA 70E, "Standard for Electrical Safety in the Workplace](#)