Purpose of Meeting

- To remind workers that proper application of lockout/tagout procedures can greatly reduce the risks of serious injury.
- To reinforce lockout/tagout safety rules.
- To consider ways to protect yourself and your coworkers from the hazards presented when machinery is unexpectedly started or stored energy is unexpectedly released.

Materials and Preparation

- A copy of the written lockout/tagout safety rules or policy.
- IMPORTANT NOTE: This training must include training on your agency’s specific policies and procedures.

Note to Trainer

- Enter your name and the training date on the Training Sign In Sheet.
- Have each attendee sign the Training Sign In Sheet next to their name.
- Use this page for your reference and give attendees copies of the remaining pages.
INTRODUCTION

When maintenance and repair operations are being conducted on machinery and equipment, workers are exposed to possible injury from the unexpected start-up of the equipment, or the release of stored energy in the equipment.

We have implemented a lockout/tagout (LOTO) program to prevent injury to individuals performing repair and maintenance tasks on machinery and other equipment. Our program requires the use of specific safety procedures to shut down, isolate, prevent the release of stored energy, and to bring the equipment back on-line.

This training module covers general concepts of lockout/tagout and associated energy control procedures.

REGULATIONS

Lockout/Tagout policies and procedures are required by OSHA Standard for the Control of Hazardous Energy (Lockout/Tagout) 29 CFR 1910.147.

RISKS

If equipment starts up without warning, clothing and hands can easily get caught in moving parts. If an accident happens, employees can lose fingers, hands, and other body parts. Workers who don't follow LOTO safety rules risk being:

- Electrocuted
- Burned
- Crushed
- Exposed to Harmful Chemicals
- Killed
The basic steps of lockout/tagout are:

1. Everyone in the work area is notified that a LOTO activity is taking place.
2. All the power sources are disconnected and any stored power is released.
3. Any parts that might accidentally move even with the power off are blocked.
4. Locks keep anyone from turning on the equipment while work is being done
5. Tags and signs let everyone in the work area know not to touch anything.

A lock or tag can NEVER be removed by anyone other than the Authorized Employee who installed it. The only exception is the use of the master key, but there are strict guidelines for when it can be used.

**Power Sources**

When most people think of power, they think of electricity, but there are many other sources of power too including:

- Mechanical
- Hydraulic (compressed liquid)
- Pneumatic (compressed air)
- Chemical
- Thermal

Keep in mind that some pieces of equipment have more than one source of energy that must be isolated before beginning maintenance activities.

Examples:

**Single source equipment:**
An electrically driven pump motor.

**Multi-source equipment:**
A large boiler that has gas, electrical, and pneumatic energy sources.
De-Energizing Equipment

De-energizing equipment means isolating it from its energy source and controlling potential energy so that no energy can flow to the equipment. Safe practices for de-energizing equipment include:

- Disconnecting equipment from energy sources
- Blocking equipment parts that could be moved by gravity.

Once equipment has been de-energized, any stored energy must be released. Safe practices include:

- Venting pressurized fluids until internal pressure levels reach atmospheric levels.
- Releasing or blocking tensioned springs.

Locking Out

“Locking out” means securing an energy-isolating device in an off, closed, or neutral position.

A lockout device secures the energy-isolating device in a safe position. When an energy-isolating device is locked out, the equipment it controls will not work until the lockout device is removed. Lockout devices include locks with keys or combination locks.

Whenever possible a lockout device must be used along with a tagout device.

Tagging Out

“Tagging out” means placing a warning tag or sign on an energy-isolating device. Tagout devices don’t provide the same physical barrier to hazardous energy as lockout devices, so it’s harder to ensure that they are equally effective.

A tagout device must be securely fastened to the energy-isolating device and must state that the equipment being serviced cannot be operated until it is removed.
NOTES:

Authorized Employees

The Authorized Employee(s) actually lock and tag machines or equipment in order to perform servicing or maintenance. Authorized Employees must be trained to recognize hazardous energy sources and follow the procedures that are used for energy isolating and control.

Affected Employees

The Affected Employee(s) use/operate a machine or piece of equipment which made need maintenance or servicing. An Affected Employee can also be a person who works in/around an area where equipment may be locked/tagged out.

Procedures

Preparation for Shutdown: Know the types/amounts of energy that powers the equipment. Know the hazards of the energy and how it can be controlled. Inform all Affected Employees that are at risk during servicing activities.

Shut Down the Equipment: Use operating controls to shut down the equipment following standard operating procedures.

Apply Devices: Lock/tag all energy isolating devices. Each Authorized Employee working on the equipment must have and use their own lock—multiple locks may be used to lock out a single device.

Release Stored Energy: Inspect the machine to ensure that all parts have stopped moving. See De-Energizing Equipment above.

Verify Equipment Isolation: Attempt to operate the equipment using normal operating controls. Return controls to OFF following this verification.
Restoring Equipment to Service

When the work has been completed and the equipment is ready for testing or returning to service, the Authorized Employee shall:

- Notify and coordinate with any Affected Employees.
- Ensure non-essential items have been removed and the components are intact.
- Check the area to see that no one is exposed to start-up hazards (noise, heat, rotating parts, etc.) and the local controls are still in the “OFF” position.
- Notify all Affected Employees, personnel or their supervisor of the equipment or processes that are about to be re-energized.
- When the equipment (area) is clear, remove lock(s) and reactivate the equipment, process, or system(s).

Conclusion

Our lockout/tagout program has been developed and implemented for the safety of all of our employees, contractors and visitors. Do your part to work safely to prevent accidents and injuries by following all of the specific procedures in our program.