



Lunch Box Safety Talks

Safety Over Sandwiches

Lockout/Tagout

Presented by Joe Mlynek
Progressive Safety Services LLC

Discussion Outline

Common Errors Companies Make (Loto)

When Lockout Tagout Applies and Doesn't Apply

The Components of an Effective Lockout Tagout Program

Training Requirements

Group Lockout Tagout

Lockout Tagout Device Removal

Contractor Requirements

Questions and Answers

Questions



Are we compliant?



Can we improve our current program?





Common Lockout Tagout Errors

Based on OSHA inspection Statistics:

- Failure to develop machine specific procedures
- Failure to conduct periodic inspections of lockout tagout procedures
- Failure to establish an Energy Control Program
- Failure to provide training to authorized and affected employees
- Failure to apply lockout and tagout devices prior to and during servicing and maintenance

*Source: Conn, Maciel, and Cary webinar
“Unlock the Mysteries of OSHA’s Lockout Tagout
Standard”*

What is Lockout Tagout?

Specific practices and procedures to safeguard employees from “**unexpected**” energization or start-up of machinery or equipment or the release of hazardous energy during servicing and maintenance.

Requires placing a lock(s) and tag(s) on the “**energy isolating device**” to prevent the release of hazardous energy and steps to verify that the energy has been isolated.



1910.147 The Control of Hazardous Energy

The standard covers the **servicing or maintenance** of machines and equipment in which the **unexpected** energization or start up of machines or equipment, or release of energy could harm employees.

Harm to employees:

- Injury
- Amputation
- Death!



Energized Energy Sources

Energized – connected to an energy source or containing residual or stored energy.

Energy Sources – electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy.



What Constitutes Servicing and Maintenance?

Constructing

Installing

Setting-Up

Adjusting

Inspecting

Modifying

Maintaining equipment



Servicing and Maintenance (Continued)

These activities include lubrication, cleaning or unjamming of machines and equipment and making tool changes, where the employee may be exposed to the ***unexpected*** energization or startup of the equipment or release of stored energy.

Normal Operations

Normal production operations are not covered by the standard.

Servicing and/or maintenance which takes place during normal operations is covered if:

- An employee is required to remove or bypass a guard or other safety device.
- An employee is required to place any part of his or her body into an area of a machine or piece of equipment where work is actually performed upon the material being processed (point of operation) or where an associated danger zone exists during the machine operating cycle.

Exception

Minor tool changes and adjustments, and other servicing activities which take place during normal production operations are not covered if they are:

- Routine
- Repetitive
- Integral to the use of equipment for production

Provided that the work is performed using alternative measures which provide effective protection.

Best Practice – develop minor intervention procedure

Exception

The standard does not apply to:

- Work on cord and plug connected equipment for which exposure to the hazards of unexpected energization or start up of equipment is controlled by unplugging the equipment from the energy source.
- Plug being under the exclusive control of the employee performing servicing and maintenance.
- Hot tap operations involving distribution systems for substances such as gas, steam, water or petroleum products.
- **Best Practice – Implement Use of Plug Lockout Equipment**



One-Minute Focus

At 10:15 a.m. on December 12, 2017, an employee was working for a firm that produced converted paper products; i.e., slit and twisted paper. He was working with a twisting machine. While the machine was still running, he removed the guard from a pulley-driven belt to check the belt. He was using his hands to push the belt to move faster, when his finger got caught in the pulley. He sustained an amputation of the ring finger on his right hand. He was not hospitalized.

Source www.osha.gov



Energy Control Program

ELEMENTS OF AN EFFECTIVE WRITTEN PROGRAM

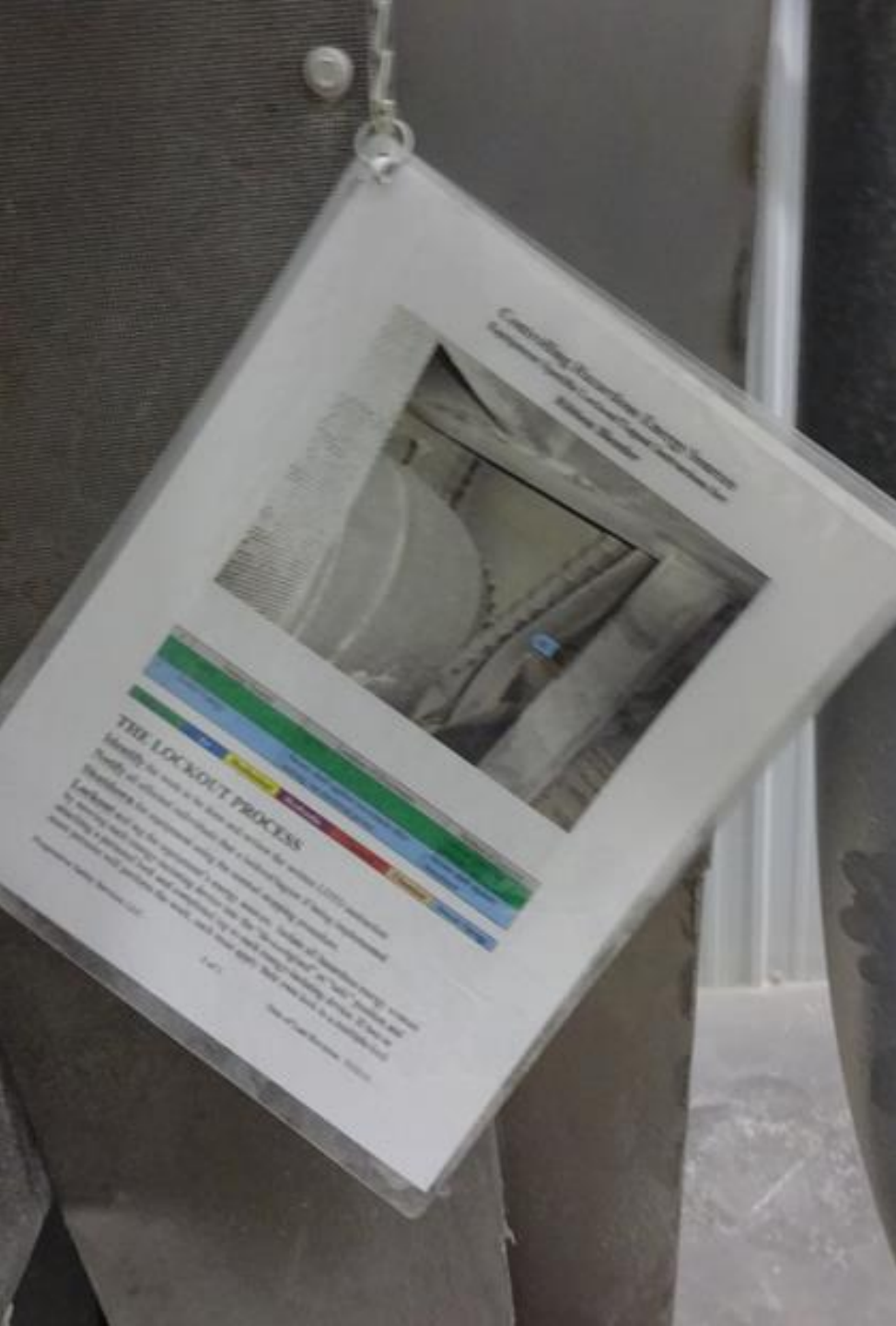
Energy Control Program Requirements

Employer must establish a program consisting of:

Energy Control Procedures

Employee Training

Periodic Inspections




Energy Control Procedure

Procedures shall be developed and utilized for the control of potentially hazardous energy.

Equipment specific

Controlling Hazardous Energy Sources
Equipment Specific Lockout/Tagout Instructions for:
Basement Hammer Leg Mill

Site Location:	ABC Company	Written By:	Joe Mynak
Date Written:	1/28/15	Approved By:	Chuck Pire



#	Energy Source	Location of Disconnect	Method of Lockout
1	Electrical	Head Section Work Platform	Lockout Lock and Lockout Tag

THE LOCKOUT PROCESS

Identify the work to be done and review the written LOTO instruction

Notify all affected individuals that a lockout/tagout is being implemented

Shutdown the equipment using the normal stopping procedure.

Lockout and tag the equipment's energy sources. Isolate all hazardous energy sources by moving each energy-isolating device into the "de-energized" or "safe" position and attaching a personal lock and completed tag to each energy-isolating device. If two or more persons will perform the work, each must apply their own lock to a multiple-lock device (HASP).

Note: This equipment requires one lock and tag per individual.

Verify that the equipment or system WILL NOT OPERATE by trying to starting the equipment/ system using the operator's controls.

Note: If you detect any response, explore the problem and then try the operator controls again

Restore the Equipment to Service when the servicing or maintenance of the

Printed Copy Valid for One Day Only 1 of 2 Date Printed: 6/19/2015

Energy Control Procedure (Continued)

Exception (all elements must exist):

1. Machine or equipment has no potential for stored or residual energy or reaccumulation of energy after shut down.
2. The machine or equipment has a single energy source which can be readily identified and isolated.
3. The isolation and locking out of that energy source will completely deenergize and deactivate the equipment.
4. The machine or equipment is isolated from the energy source and locked and tagged out during servicing and or maintenance.
5. A single lockout device will achieve a locked-out condition.
6. The servicing or maintenance does not create hazards for other employees.
7. The employer has had no accidents involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.

Energy Control Procedures (Continued)

If energy control procedures are required, they must:

- Clearly outline the scope, purpose, authorization, rules and techniques utilized to control the hazardous energy.
- A specific statement of the intended use of the procedure.
- Specific procedural steps for shutting down, isolating, blocking or securing machines or equipment to control hazardous energy.
- Specific procedural steps for placement, removal, and transfer of lockout devices, tagout devices, and other energy control measures.

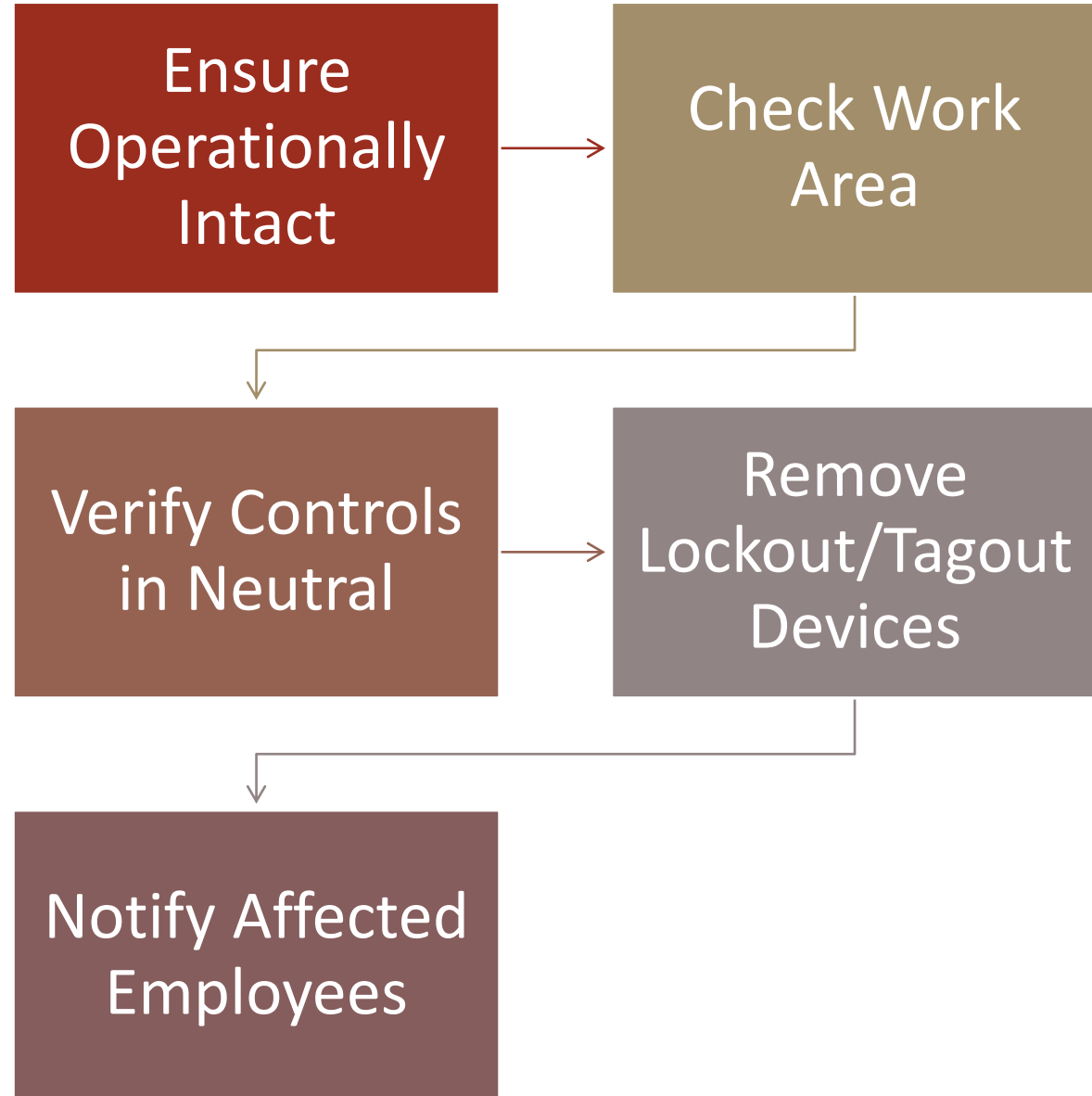


Generally Accepted Lockout Tagout Procedure

Seven Steps of Lockout/Tagout:

1. Notify Affected Employees
2. Identify Type and Magnitude of Energy
3. Shut Down Equipment
4. Deactivate the Energy Isolating Devices
5. Lock and Tag Energy Isolating Devices
6. Dissipate or Restrain Stored Energy
7. Verify that Equipment is Disconnected From Energy Source(s)

Removal and Re-energizing





One Minute Focus

At 5:45 p.m. on July 9, 2018, Employee #1 was attempting to empty the remaining corn from the inside of a grain bin while the sweep auger was running. The rotating blade of the sweep auger made contact with the employee's left leg, resulting in severe lacerations. The employee exited the grain bin and was later found dead in his truck. Employee #1 died from blood loss, as a result of the severe lacerations sustained from contact with the sweep auger blade.

Source: www.osha.gov

Protective Materials and Hardware

Locks, tags, hasps, group lockout boxes, etc.

Lockout and tagout devices must be singularly identified, only used for controlling energy.

Durable -withstand the work environment to which they are exposed for the maximum exposure time.



Protective Materials and Hardware (Continued)

Constructed and printed so that weather conditions or wet or damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.

Tags shall not deteriorate in corrosive environments.

Devices must be standardized within the facility by either color, shape or size. Tag devices print and format shall be standardized.

Protective Materials and Hardware (Continued)

Substantial enough to prevent removal without use of excessive force or unusual techniques (i.e. bolt cutters or other metal cutting tools.)

Tagout devices – Prevent inadvertent removal.

Identifiable – Lockout and tagout devices must indicate the identity of the employee applying the devices.

Locks and Keys

Order with one key

Duplicate keys must be secured or destroyed

Designated for one user (personal)





“Didn’t Want
to Lose My
Key”

Periodic Inspections

Employer shall conduct periodic inspection of the energy control procedure at least annually to ensure that the procedure(s) is being followed.

Performed by an authorized employee other than the one(s) utilizing the energy control procedure being inspected.

Inadequacies or deficiencies corrected

Periodic Inspections (Continued)



Periodic inspection must include a review between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.



Inspections must be certified (documented):

Identity of machine or equipment

Date of inspection

Employees included in the inspection

Person performing the inspection



Best Practice: Document inspections using a checklist approach.

Training

SIMPLE STEPS CAN
PREVENT INJURIES
AND SAVE LIVES

Training Focus

Purpose and function of the energy control program

Ensure that employees have knowledge and skills required for safe application, usage, and removal of energy controls.



Training Elements

Training must include:

- Recognition of applicable hazardous energy sources.
- Types and magnitude of energy available in the workplace.
- Methods and means necessary for energy isolation and control.

Training

Must provide training specific to the needs of the employee:

- Authorized Employee
- Affected Employee

Definitions



Affected employee - operates or uses a machine or equipment on which servicing or maintenance is being performed under lockout/tagout.

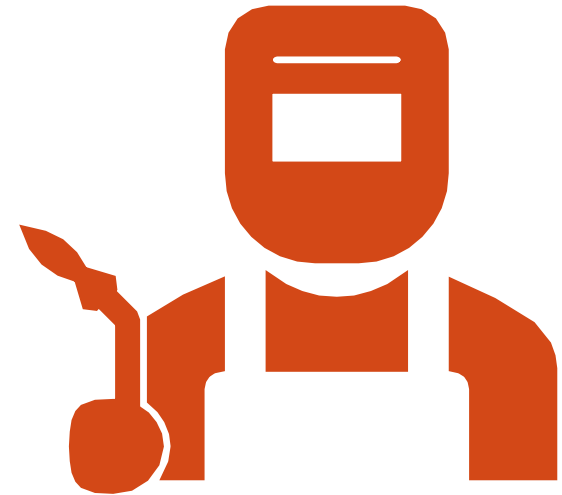


Authorized employee - person who locks out or tags out machines or equipment in order to perform servicing or maintenance.

Training

Authorized Employee

- Training Requirements
 - Knowledge and skills for safe application, use, and removal of energy isolating devices.
 - Hazardous energy source recognition.
 - Type and magnitude of hazardous energy sources in the workplace.
 - Energy control procedures.



Training

Affected Employee

- Usually machine operators or users.
- Employees who operate the relevant machinery or whose jobs require them to be in the area where servicing or maintenance is performed.
- Training Requirements
 - Purpose and use of energy-control procedures.
 - Recognition on when an energy control procedure is being used.
 - Must understand the importance of not tampering with lockout or tagout devices and not starting or using equipment that has been locked and tagged out.

Retraining

All authorized and affected employees must be retrained when there is a change in the following:

- Job assignments.
- Equipment or processes that present a new hazard.
- Energy control procedures.
- A periodic inspection reveals that shortcomings exist in employee's knowledge or use of energy control procedures.



One Minute Focus

At 12:00 p.m. on June 19, 2018, Employee #1 was servicing a mobile conveyor. The employee was found later that evening with his left leg caught in the conveyor, under its' sprockets, and with his right leg on top of the conveyor chute. The conveyor was not running when he was found, but the key was in the controls. The conveyor had not been locked out during servicing activities, and the throat opening guard had been removed to allow for maintenance work to take place. Employee #1 was pronounced dead on the scene.

Source www.osha.gov



Device Removal

Lockout Device Removal

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

There is an exception that the employer may use.



Device Removal Exception

When the authorized employee who applied the lockout or tagout device is not available to remove it, that device may be removed under the direction of the employer provided that:

- Specific procedures and training for removal have been developed, documented and incorporated into the employer's energy control program.
- The employer can demonstrate that the specific procedure provides equivalent safety to the removal of the device by the authorized employee who applied it.

Device Removal (Continued)

Specific removal procedures must include the following:

- Verification by the employer that the authorized employee who applied the device is not at the facility.
- Making all reasonable efforts to contact the authorized employee to inform them that their lockout or tagout device has been removed.
- Ensuring that the authorized employee has knowledge of the removal before they resume work at the facility.

Device Removal – Best Practices

Best Practice Options:

- Define “reasonable efforts to contact authorized employee.”
- Require employee to return to site to remove locks.
- Develop a permit system that ensures required elements and an inspection of the equipment by an authorized employee (manager) to inspect the equipment prior to removal and restarting.



Testing and Positioning

Situations may require lockout tagout devices to be temporarily removed and the equipment energized to test or position the machine require certain actions:

- Clear machine or equipment of tools and materials.
- Remove employees from the machine or equipment area.
- Remove lockout tagout devices
- Energize and proceed with testing and positioning
- De-energize and re-apply energy control measures

Group Lockout

MAXIMIZE PROTECTION

Group Lockout

Situations where servicing or maintenance is performed by a crew, department, group, etc.

Group lockout devices must be used.

Primary responsibility must be vested in an authorized employee for a set number of employees working under the protection of a group lockout or tagout device.



Group Lockout (Continued)

Authorized employee must ascertain the exposure status of individual group member with regard to the lockout or tagout of a machine or equipment.

Each authorized employee shall affix their lockout tagout device to the group lockout device when he or she begins work and remove those devices when he or she stops working on the machine or equipment being serviced or maintained.

Shift or Personnel Changes



Specific procedures
should be utilized to
ensure:

Continuity of lockout
tagout protection
Provisions for orderly
transfer of lockout
tagout devices between
off-going and oncoming
employees.



Often referred to as “hand-off”



**Best practice: Include language in
Energy Control Program**



Outside Contractors

COORDINATING EFFORTS

Contractors

On-site (host) employer and outside employer shall inform each other of their respective lockout tagout procedures.

The host employer shall ensure that his or her employees understand and comply with restrictions and prohibitions of the outside employers' energy control program.

Best Practices:

Include this as part of contractor safety program and include discussion in contractor safety meeting.

Host employer participates in group lockout during project.

Labeling

Ensure that energy isolating devices are properly labeled.

Consider use of:

- Alpha-numeric labeling system versus name of equipment
- Permanent labeling rather than magic marker
- Label corresponding equipment

Labeling





Labeling

Questions



Are we compliant?



Can we improve our current program?

Resources

Conn, Maciel, and Cary webinar “Unlock the Mysteries of OSHA’s Lockout Tagout Standard”

OSHA 1910.147 The Control of Hazardous Energy

Osha.gov – Numerous Questions on Lockout Tagout Under 1910.147 and Subpart S

Supervisor Talking Points

Quiz

Disclaimer

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Questions?

Joe Mlynek CSP, OHST

joe@safetymadesimple.com

joe.mlynek@progressivesafety.us

