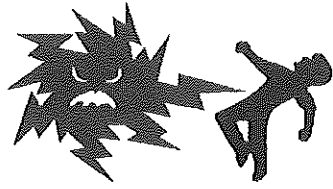


Lesson Plan

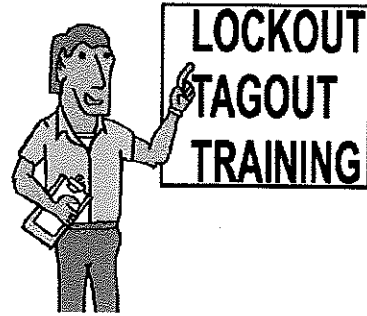
Course Title: Lockout Tagout
Time: Approximately 45 minutes
Objective: To inform employees of the requirements under OSHA Standard CFR 1910.147 Control of Hazardous Energy (Lockout / Tagout).

Teaching Aids Required: -Overhead Projector
 -Pointer
 -Several different types of isolation devices to show.

Slide #	Information	Time Per Area
1	Lockout / Tagout	0:30
2	Introduction to Lockout / Tagout What is Lockout / Tagout? Who does this standard apply to? Why is it important? My Background	5:00
3	OSHA Standard CFR 1910.147 What are the Control of Hazardous Energy (Lockout / Tagout) Standard requirements? What should employees be informed of? Are there any times when I don't need to use Lockout / Tagout Procedures?	5:00
4	Recognition of Energy Sources What is an Energy Source? What are some examples here at work? What are the types and magnitudes of energy sources available on site?	5:00
5	Energy Isolation and Control What is an energy isolating device? What are some examples? Examples of non-energy isolating devices?	5:00
6	Energy Control Procedure What is an Energy Control Procedure? What are the Lockout steps in the Energy Control Procedure?	5:00
7	Energy Control Procedure (cont'd) What are the steps I follow when my work is completed?	5:00
8	Discussion Please share experiences you have had in this area. Give two examples of where you witnessed actions that put employees at risk. Why is this a critical Government rule? Who is ultimately responsible for an effective Lockout / Tagout program?	5:00
9	Start videotape "OSHA's New Hazardous Energy Source"	10:00

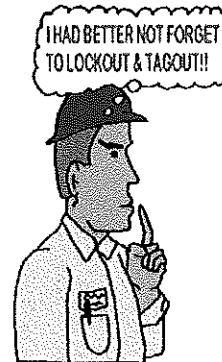


Lockout / Tagout



Introduction to Lockout / Tagout

- What is Lockout / Tagout?
- Who does this standard apply to?
- Why is it important?
- My Background



What is Lockout / Tagout?

-Standard developed to ensure that before any employee performs any servicing or maintenance on a machine or equipment where the unexpected energizing, start up or release of stored energy could occur and cause injury, the machine or equipment shall be isolated from the energy source, and rendered inoperative.

Who does this standard apply to?

- This standard applies to the control of energy during servicing and/or maintenance of machines or equipment.
- Servicing that takes place under normal production operations that requires:
 - Removal or bypassing of a guard or other safety device.
 - An employee to place any body part near a point of operation (any moving dangerous parts).

Why is it important

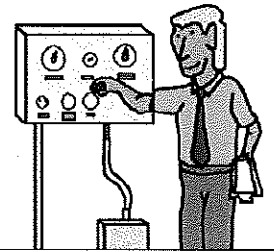
- It is important for safe maintenance or servicing of equipment.
- Vital for keeping alive!

My Background

- How long I have worked here
- My role and responsibilities
- How this standard impacts my job
- Personal reasons why this is important

OSHA Standard CFR 1910.147

- What are the Control of Hazardous Energy (Lockout / Tagout) Standard requirements?
- What should employees be informed of ?
- Are there any times when I don't need to use Lockout / Tagout Procedures?



What are the Control of Hazardous Energy (Lockout / Tagout) Standard requirements?

-The requirements cover the areas of an Energy Control Program:

- Establishing a Energy Control Procedures
- Employee Training
- Periodic Inspections

What should employees be informed of?

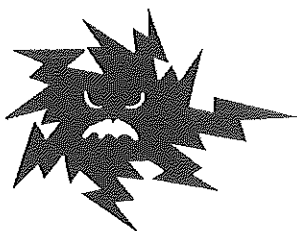
- recognition of energy sources
- the type and magnitude of energy sources available on site
- methods and means necessary for energy isolation and control
- the purpose and use of the energy control procedure

Are there any times when I don't need to use Lockout / Tagout Procedures?

- Minor tool changes and adjustments which take place during normal production operations. If the changes and adjustments are routine, repetitive, and integral to the use of the equipment. This is acceptable provided that the work is performed using alternative measures which provide effective protection.
- Work on cord and plug connected electric equipment for which all energy sources can be controlled by unplugging the equipment and keeping the plug under the exclusive control of the employee performing the work.

Recognition of Energy Sources

- What is an Energy Source?
- What are some examples here at work?
- What are the types and magnitudes of energy sources available on site?



What is an Energy Source?

-Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, potential energy or other forms of energy.

What are some examples around here?

-Discuss different tools and equipment that fit this standard.

Examples: Corded hand drills (exempt), punch press (electric, hydraulic, mechanical), what are some more?

-Discuss examples of Stored or Residual Energy here at work?

Examples: Look for things like capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam or water pressure.

What are the types and magnitudes of energy sources available on site?

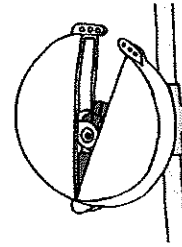
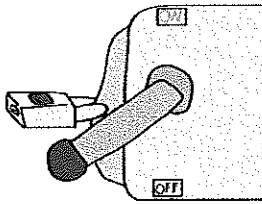
-Discuss the two categories and examine more closely the examples from the previous question. Did we recognize all the types of energy involved or did we miss some?

-Type (electrical, mechanical, pneumatic ... etc.)

-Magnitude (220 volts, 440 volts, 1500 pounds of pressure ... etc.)

Energy Isolation and Control

- What is an energy isolating device?
- What are some examples?
- Examples of non-energy isolating devices?



What is an energy isolating device?

-A mechanical device that physically prevents the transmission or release of energy.

What are some examples?

-Manually operated electrical circuit breaker; a disconnect switch

-A line valve; a block

-Can you name any more?

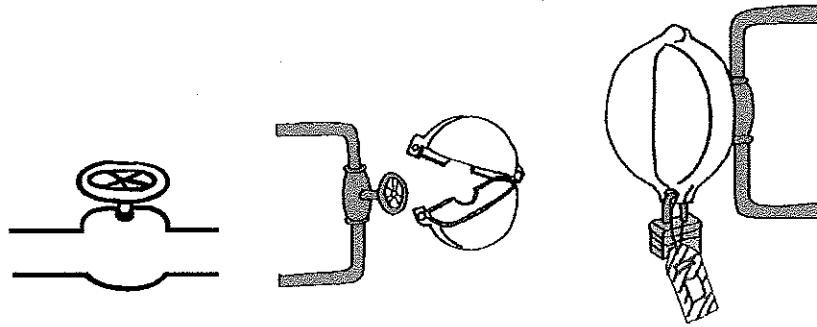
Examples on non-energy isolating devices?

-Push buttons, Selector switches, etc.

-What others?

Energy Control Procedure

- What is an Energy Control Procedure?
- What are the Lockout steps in the Energy Control Procedure?



What is an Energy Control Procedure?

-An agreed upon set of steps consistently used to ensure that before any employee performs any servicing or maintenance on a machine or equipment that all forms of energy in the machine are isolated and/or at a zero energy state.

What are the Lockout steps in the Energy Control Procedure?

1. Notify all affected employees that servicing or maintenance is to be performed. Make sure that the employees are aware that the equipment is to be shut down and locked out during this time.
2. Refer to the documented procedure for locking down that piece of equipment. This document should describe the types of energy involved, the magnitude of the energy, the hazards involved and the methods used to control the energy.
3. Shut down machine using normal stopping procedure.
4. De-energize machine and put in place energy isolating devices
5. Lock out the energy isolating devices with assigned individual locks.
6. Dissipate or restrain all stored or residual energy.
7. While keeping all people away from the machinery, verify effectiveness of lockout by trying to activate the machine with any of the controls, confirming that the machine will not operate.
8. The machine is now locked out.

Energy Control Procedure (cont'd)

- What are the steps I follow when my work is completed?



What are the steps I follow when my work is completed?

-Discuss this with the class and come up with the most likely steps. (Work on this for a couple of minutes before continuing.)

Restoring Equipment: When work is complete and the machine is ready to be returned to normal operating condition:

1. Insure that all nonessential items have been removed and that the machine components are operationally intact.
2. Check the work area to insure that all people have been safely positioned or removed from the area.
3. Verify that the controls are in neutral.
4. Remove the Lockout devices and reenergize the machine.
5. Inform all affected employees that the work is completed and the machine is ready for use.

Discussion

- Please share experiences you have had in this area.
- Give two examples of where you witnessed actions that put employees at risk.
- Why is this a critical Government rule?
- Who is ultimately responsible for an effective Lockout / Tagout program?

Please share experiences you have had in this area.

- close calls
- mishaps at other facilities
- news reports

Give two examples of where you witnessed actions that put employees at risk.

- not putting locks on
- not notifying affected employees

Why is this a critical Government rule?

- what makes this important
- what can happen if disregarded
- why is it just good business sense

Who is responsible for a safe working environment?

- each person at this facility
- we are all responsible