TITLE: 4729 MORE HIGH-IMPACT LOCKOUT/TAGOUT SAFETY TRAINING (Concise)

10 MINUTES PRODUCTION YEAR: 2012

PROGRAM SYNOPSIS:

Nearly 200 employees are killed and thousands of others injured each year when they are exposed to the sudden, unexpected release of hazardous energy. To protect workers from such incidents, a set of procedures known as lockout/tagout is used to disconnect and isolate all of the hazardous energy sources to a machine, piece of equipment or other device. This program stresses the importance of controlling hazardous energy in all required situations while providing viewers with a basic understanding of the key elements in the lockout/tagout process. Also featured are six workplace injury reenactments that illustrate the devastating consequences of improper lockout/tagout operations.

Topics include situations that require lockout/tagout, "authorized," "affected" and "other employees," proper use of locks and tags, steps involved in performing a lockout procedure, verifying a zero energy state, returning equipment to service and group lockout procedures.

PROGRAM OBJECTIVES:

After watching the program, the viewer will be able to explain the following:

- When lockout/tagout operations are required;
- What "authorized," "affected" and "other" employees are;
- How to properly use locks and tags;
- What sequence of steps is used when performing a lockout procedure;
- How equipment should be returned to operation after service is complete;

PROGRAM OUTLINE:

WHAT THE TERM 'LOCKOUT/TAGOUT' MEANS

- Lockout/tagout is a set of procedures used to disconnect and isolate all sources of hazardous energy to a machine, piece of equipment or other devices. It's called lockout/tagout because a special-purpose lock is used to lock the energy source in a disconnected position and a specialized tag is applied which indicates the equipment should not be operated.
- Performing a lockout/tagout procedure allows workers to service or repair equipment without the risk of the machine starting unexpectedly or hazardous energy being released.
- Performing a lockout/tagout before placing yourself in the path of a potential release of hazardous energy is not only required by your organization and by OSHA, it's also a logical way to protect yourself from injury or death.

WHEN LOCKOUT/TAGOUT IS REQUIRED

- Performing a lockout/tagout is required when a worker removes or bypasses machine guarding, light curtains, electrical cover plates, interlock switches or other safety devices, resulting in exposure to hazards.
- Lockout/tagout is also required before a worker places any part of his or her body in contact with the point of operation of a machine or piece of equipment, or places any part of his or her body into the danger zone associated with a machine's actions or operating cycle.
- Some common situations that require lockout procedures to be performed include opening chemical lines, repairing electrical equipment,, clearing jammed mechanisms and adjusting or lubricating machinery.

AUTHORIZED, AFFECTED & OTHER EMPLOYEES

- While it's imperative that a proper lockout/tagout be performed before conducting these types of operations, keep in mind that OSHA regulations only permit "authorized employees" to conduct lockout operations. Authorized employees have received training on, and must understand, the type and magnitude of the various energy sources supplying the equipment as well as the proper means to isolate and control that energy.
- In addition, authorized employees must understand the specific hazards of the machine, know the proper shut down procedures and be able to verify that all hazardous energy has been released or isolated.
- In addition to authorized employees, OSHA also defines two other classes of employee relative to lockout/tagout operations, "affected employees" and "other employees."
- Affected employees include those who are operators of equipment which is being locked and tagged out of service or work in areas where a lockout procedure could take place.
- Affected employees must be notified before a lockout procedure is begun and told which equipment is to be locked out. Affected employees must also be notified before equipment is re-energized.
- Other employees are those not directly affected by a lockout. Other employees must be able to recognize when a lockout is in progress and understand not to remove a lock and tag and to not re-energize any locked and tagged equipment.
- Again, only authorized employees may perform lockout/tagout procedures. Of course, being an authorized employee is meaningless if you choose not to perform the lockout when required.

FAILURE TO USE ASSIST DEVICE OR LOCKOUT MACHINE RESULTS IN MANGLED ARM

- "The procedure calls for using a special tool to clear the jam, something to keep your arms clear of any moving parts," polishing machine operator Lindsey Walters says in an interview." 'Technically, it's called an assist device. Anyway, if that doesn't work we're supposed to do a full lockout before we go any further."

- "I couldn't find the assist device, so I decided to just use my hand," adds Lindsey. "I grabbed hold of the jammed material and pulled really hard; all of a sudden, the machine seemed to pull back!"
- "I couldn't let go fast enough before my arm was inside the machine up past my elbow, she says. "It hurt so bad and I was terrified."
- A co-worker quickly hit the E-Stop, but the damage had already been done.
- "Now I'm left with this. Look, if you're supposed to do the lockout, do it. It doesn't matter how simple it may seem to clear a jam or do some other routine maintenance. If you stick your hand in a machine without locking it out, you just may not get it back; and, if you do, you may not want it back," Lindsey reluctantly admits.

PROPER USE OF LOCKS & TAGS

- Just as only authorized employees can perform lockout procedures, only authorized locks, tags and devices may be applied during lockout operation.
- Locks and tags used by your organization will be standardized by color, shape or size. Tags will have a standard type of print and format.
- Before attaching a tag, make sure it includes your name and all other information your company requires.

STEPS INVOLVED IN PERFORMING A LOCKOUT PROCEDURE

- Remember that the written lockout procedure will detail the specific steps to follow and the order in which they should be performed.
- First, notify all affected employees that you will be doing a lockout, which equipment is involved and the purpose of the operation.
- Next, shut down the equipment with the normal on/off controls.
- Isolate all energy sources with an energy-isolating device. Energy-isolating devices are mechanical devices that physically prevent the release or transmission of energy; for example circuit breakers, disconnect switches or a line valve.
- Control circuit devices such as push buttons or selector switches are not energy-isolating devices and should not be used to control energy during lockout operations.
- Once the energy source is isolated, use the lock and tag provided by your employer to lock the energy isolation device.
- Keep in mind that electricity is not the only type of energy which must be controlled. Other energy sources include mechanical, hydraulic, pneumatic, chemical, thermal and the force of gravity.
- Once all energy sources are controlled and locked try to operate the equipment by using its normal on/off controls to ensure that it will not start.

VERIFYING A ZERO ENERGY STATE

- When qualified electricians perform a lockout procedure in order to service electrical equipment, they must test the lockout to ensure that no voltage exists.
- This is often referred to as verifying a "zero energy state" and must be performed while wearing appropriate shock and arc flash protection rated for the equipment being tested while using a verified working voltmeter.

RETURNING EQUIPMENT TO SERVICE

- When servicing is complete and the equipment needs to be returned to service, the written lockout procedure will specify the steps to be taken and the specific order in which they must be performed.
- First, make sure all tools, excess materials and personnel are cleared from the machine's areas of operation and from the immediate area and replace all machine guarding, cover plates, light curtains and other safety devices.
- Alert any affected employees and any other employees in the area that the machine is about to be re-energized.
- Make sure the normal on-offs or run controls are in the off or stop position.
- Lastly, remove locks and tags and return the energy-isolating device to its normal "on" position. Then turn on the equipment or machine using its normal controls and verify that the service or repair was successful before informing any affected employees that the machine or process is back in service.

GROUP LOCKOUT

- A group lockout takes place when there is more than one person working on the equipment or system that is controlled by an energy-isolating device.
- In a group lockout, one person will have primary responsibility for the lockout, but each person must attach their own lock and tag to the energy-isolating device. This is often done by using a group lockout hasp which provides space for several locks.
- When work is completed and the procedure for re-energizing the equipment has been followed, each person must remove his own lock and tag. This ensures that all workers are safely clear of the equipment before it is re-energized.

WORKER'S ARM SEVERELY INJURED ON SHEET METAL CONVEYOR

- Remember that lockout procedures are required anytime you remove or defeat any safety devices designed to protect you from a machine's hazards, even if you are not planning on getting too close or even doing any work.
- "I was inspecting the parts of a conveyor system for signs of wear. I didn't plan on doing any actual work so I didn't think I needed to do any type of lockout," says Brian Johnson. a service technician in a plant's production area.
- "I placed my hand on the conveyer frame to get a better look at the worn parts. That's when the conveyor started up," he explains.
- "Looking back, I don't know what I was thinking," Brian says. "We have a lockout procedure designed to make that line safe for inspection. Next time, I'll use it."
- "Next time, I'll do the lockout." That seems to be a common refrain among those who have experienced the devastating results of improper lockout/tagout operations. Tragically, there are many who won't get a second chance to be safe.