



Training Solutions, Delivered!

LOCKOUT/TAGOUT: *Controlling Hazardous Energy*

**Leader's Guide, Fact Sheet
& Quiz**

Item Number: 5153
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This easy-to-use Leader's Guide is provided to assist in conducting a successful presentation.

PREPARING FOR THE MEETING

Here are a few suggestions for using this program:

- a) Review the contents of the Fact Sheet that immediately follows this page to familiarize yourself with the program topic and the training points discussed in the program. The Fact Sheet also includes a list of Program Objectives that details the information that participants should learn from watching the program.
- b) If required by your organization, make an attendance record to be signed by each participant to document the training to be conducted.
- c) Prepare the area and equipment to be used for the training. Make sure the watching environment is comfortable and free from outside distractions. Also, ensure that participants can see and hear the TV screen or computer monitor without obstructions.
- d) Make copies of the Review Quiz included at the end of this Leader's Guide to be completed by participants at the conclusion of the presentation. Be aware that the page containing the answers to the quiz comes before the quiz itself, which is on the final page.

CONDUCTING THE PRESENTATION

- a) Begin the meeting by welcoming the participants. Introduce yourself and give each person an opportunity to become acquainted if there are new people joining the training session.
- b) Introduce the program by its title and explain to participants what they are expected to learn as stated in the Program Objectives of the Fact Sheet.
- c) Play the program without interruption. Upon completion, lead discussions about your organization's specific policies regarding the subject matter. Make sure to note any unique hazards associated with the program's topic that participants may encounter while performing their job duties at your facility.
- d) Hand out copies of the review quiz to all of the participants and make sure each one completes it before concluding the training session.

5153 LOCKOUT/TAGOUT: Controlling Hazardous Energy FACT SHEET

LENGTH: 11 MINUTES

PROGRAM SYNOPSIS:

Lockout/tagout is a system of energy control procedures that must be used anytime machine guards are opened or removed, electrical doors or covers are opened or anytime a person is potentially exposed to injury from the unexpected start up or energization of equipment. To help prevent injuries during lockout/tagout operations, your organization has developed a written energy control program in accordance with OSHA's Control of Hazardous Energy Standard. This plan must provide training to ensure employees understand its purpose and function. That's the purpose of this program—to review the various components of your organization's energy control plan and how these elements work to keep workers safe during lockout/tagout operations.

Topics include situations that require lockout/tagout, the energy control plan, the three employee designations related to lockout procedures, lockout/tagout devices, the sequence of a lockout procedure, returning equipment to service after a lockout and special lockout situations.

PROGRAM OBJECTIVES:

After watching the program, the participant should be able to explain the following:

- Which workplace situations require lockout/tagout and which ones do not;
- What the purpose and components of the written energy control plan are;
- Which employees are considered "authorized," "affected" and "other workers";
- What the requirements are for locks and tags used in lockout operations;
- What the sequence of steps in which authorized workers must follow when performing a lockout procedure is;
- What the sequence of steps is in returning equipment to service after when performing a lockout procedure has been completed;
- Which lockout situations require special consideration.

INSTRUCTIONAL CONTENT:

LOCKOUT/TAGOUT OVERVIEW

- Lockout/tagout is a system of energy control procedures that must be used anytime machine guards are opened or removed, electrical doors or covers are opened or anytime a person is potentially exposed to injury from the unexpected start up or energization of equipment. This most often occurs during maintenance operations when machines or equipment are being serviced or adjusted.
- During a lockout operation, all energy sources to a machine or piece of equipment are disconnected, blocked or opened, and then locked in the disconnected position and marked with a tag to indicate that the equipment must not be re-energized.
- The lockout devices, locks and tags used for this purpose, must be authorized by the company and used for no other purpose. They must be constructed in a sturdy manner so they cannot be easily removed and must be able to withstand the environment in which they are used.
- Each person involved in a lockout operation must place their own lock on the energy control device and keep control of the key.
- Once all energy sources have been locked and tagged, the lockout must be "tried" to ensure that the equipment will not start. To try a lockout, the normal on/off controls must be used to verify that the machine

will not start. Any exposed electrical parts must also be verified as being de-energized.

- Once the work is completed, all tools removed, and all safety devices put back into place, each worker must remove their own lock and tag from the energy control device. This ensures that all workers are safely clear of the equipment before it is restarted.
- Your organization has developed a written energy control plan that consists of energy control procedures that clearly outline the specific methods to be used to isolate and control hazardous energy.
- The written plan and its procedures must consider various types of energy sources including electricity, compressed air, hydraulic systems, stored energy and even the force of gravity.
- There are different employee designations related to lockout/tagout procedures: authorized employees, affected employees and other employees.
- Authorized employees are the only ones permitted to perform lockout/tagout procedures.
- All workers must be able to recognize when a lockout operation is in progress and understand that they are prohibited from removing a lock or tag and must never apply power to locked and tagged equipment. During a lockout/tagout operation, someone's life depends on the equipment remaining deenergized.

WHEN IS LOCKOUT/TAGOUT REQUIRED?

- OSHA's Lockout/Tagout regulation covers the servicing and maintenance of machines and equipment in which the unexpected energization, startup or release of stored energy, could harm employees.
- In most circumstances, workers are protected from the hazards of a machine's actions or exposure to energized electrical parts by safety devices such as machine guarding and electrical cover plates.
- During normal production, servicing and maintenance operations, when these safety devices remain in place and employees are not exposed to hazards, performing a lockout/tagout is not required.
- In addition, when work is performed on equipment solely powered by a cord and plug, and that plug is unplugged and under the exclusive control of the employee performing the work, performing a lockout/tagout is not required.
- A lockout/tagout is required anytime an employee must bypass or remove a guard or other safety device or is required to place any part of his or her body into the point of operation of a machine or into the danger zone created by a machine's movements or its operating cycle.
- Some common situations that require lockout/tagout include servicing electrical circuits, removing machine guards to repair or service equipment and clearing machine jams.

THE ENERGY CONTROL PLAN

- To help prevent injuries from the unexpected energization of machines or equipment, or the unexpected release of stored energy, your organization has developed a written energy control program in accordance with OSHA's Control of Hazardous Energy Standard.
- The energy control program consists of energy control procedures, commonly known as lockout/tagout procedures, that clearly outline specific methods to be used to isolate and control hazardous energy as well as employee training and inspections to ensure energy sources are properly isolated before service or maintenance work is performed.
- Also included in the plan are procedures for the proper placement and removal of lockout devices, specific requirements for testing the effectiveness of the energy control methods and any special lockout policies such as group lockouts, working with outside contractors, shift changes and other special situations.
- If you have any questions about a lockout operation or need access to the lockout procedure for a specific piece of equipment, be sure to consult the written energy control plan.

AUTHORIZED, AFFECTED & OTHER EMPLOYEES

- Your organization's energy control program designates three types of employees according to their roles and responsibilities in lockout/tagout operations.
- Authorized employees are the only ones permitted to perform lockout/tagout procedures. They must

know the type and magnitude of the energy sources involved and understand the methods and means for isolating and controlling that energy.

- Affected employees are those employees who operate machines or equipment that will be affected by lockout/tagout operations.
- All affected employees must be notified prior to beginning any lockout/tagout operation and told how long the equipment will be out of service. After the service is completed, affected employees must be informed that the work is complete and notified that the equipment will be re-energized and returned to service.
- The final designation is that of "other worker." Other workers are those who are not directly affected by the lockout operation, but work in the general area. They must be able to recognize when a lockout is in progress and understand that they are prohibited from removing locks or tags or attempting to energize locked out equipment.

LOCKOUT/TAGOUT DEVICES

- Locks and tags used in the lockout/tagout process must be approved by your organization and must not be used for any other purpose. They must be consistent in color, shape or size and the print and format of tagout devices must be standardized.
- Lockout devices must be constructed in a sturdy manner so they cannot be easily removed and must be able to withstand the environment in which they are used.
- Tagout devices must also be able to withstand the environment in which they are used, and their attaching devices must be able to withstand 50 pounds of force.
- The tag must identify the employee applying it and usually includes information such as the date the work began, the expected completion date and the department of the worker involved.
- It must also warn employees about the hazards should the machine be energized and offer clear instruction, such as "Do Not Energize" or "Do Not Operate."

THE SEQUENCE OF A LOCKOUT PROCEDURE

- Authorized workers must follow a sequence of steps when performing a lockout/tagout procedure.
- First, they familiarize themselves with the specific lockout procedure for the equipment involved and identify all sources of hazardous energy related to the equipment.
- Then they notify all affected workers that the equipment or process is being removed from service and why.
- Next, the equipment is shut down using its normal on/off control functions.
- After the equipment is properly shut down, all energy sources are isolated by opening switches, closing valves or other methods.
- Then, each energy isolating device is locked with an approved lockout device and tagged with an appropriate tagout device.
- Any stored or residual energy must then be controlled. This could include capacitors being discharged, objects affected by gravity being secured and other stored energy released.
- Finally, and most importantly, the equipment is tested to ensure the lockout procedure was done properly and that the equipment is in fact de-energized.
- Only after the lockout has been properly tested and verified successful may the required repair or service be performed.

RETURNING EQUIPMENT TO SERVICE AFTER A LOCKOUT/TAGOUT

- When a lockout/tagout procedure has been completed, an authorized worker follows a specific sequence of steps to return the equipment to service.
- First, all tools and materials from the immediate area around the machine are removed.
- Then, any protective devices or machine guards that were removed as part of the service procedure are replaced and the equipment's normal controls are verified to be in the "off" position.

- Next, all “affected employees” are informed the equipment is going to be re-energized and the danger zone around the machine is cleared of personnel.
- All locks and tags are then removed from the energy isolating devices and the equipment is re-energized according to the written lockout procedure.
- The equipment is then restarted using its normal operating controls, making sure that any appropriate restarting procedures are followed.
- After the equipment has been restored to operation and the work performed is confirmed to be successful, all affected employees are notified that the machine is up and running.

GROUP LOCKOUT & OTHER SPECIAL SITUATIONS

- Three lockout/tagout situations that require special consideration are group lockout, shift change and outside contractors.
- During a group lockout, a designated authorized person will have primary responsibility for the operation. Each employee under his or her authority must place their own lock and tag onto a multiple lock hasp, group lock box or similar device.
- In addition to placing their own lock, each person working on the equipment, or their representative, should witness the testing of the lockout.
- Each worker involved in the work is responsible for removing their own lock and tag when they finish working on the equipment.
- During a shift change, specific procedures listed in the written energy control plan must be followed to maintain the continuity of the lockout. This includes making sure that arriving workers attach their locks before the departing workers remove theirs.
- A third special situation is when working with outside contractors. Contract workers must be trained in lockout/tagout operations by their employer, making them “authorized employees.”
- Onsite employers and outside employers must inform each other of their respective lockout/tagout procedures. Good communication is critical to ensure that all aspects of each organization’s energy control procedures are followed.

ANSWERS TO THE REVIEW QUIZ

1. a

2. a

3. a

4. b

5. b

6. c

7. b

8. c

9. a

REVIEW QUIZ

Name _____ Date _____

The following questions are provided to determine how well you understand the information presented in this program.

1. In most circumstances, workers are protected from the hazards of a machine's actions or exposure to energized electrical parts by safety devices such as machine guarding and electrical cover plates.
 - a. True
 - b. False

2. Special lockout policies for group lockouts, shift changes and outside contractor work are included in the written energy control plan.
 - a. True
 - b. False

3. _____ are the only ones permitted to perform lockout/tagout procedures.
 - a. Authorized employees
 - b. Affected employees
 - c. Other workers

4. "Other workers" are those employees who operate machines or equipment that will be affected by lockout/tagout.
 - a. True
 - b. False

5. Locks and tags used in lockout/tagout operations may be used for any other purpose within your organization as long as they are consistent in color, shape or size.
 - a. True
 - b. False

6. Attaching devices used to affix tagout devices must be able to withstand _____ of force.
 - a. 10 pounds
 - b. 25 pounds
 - c. 50 pounds

7. What is the most important step in the lockout sequence?
 - a. Locking and tagging each energy isolating device
 - b. Testing the equipment to ensure it is de-energized
 - c. Controlling any stored or residual energy

8. The first step in returning equipment to service after a lockout/tagout is to _____.
 - a. Inform all affected employees the equipment is going to be re-energized
 - b. Replace any protective devices or machine guards that have been removed
 - c. Remove all tools and materials from the immediate area around the machine

9. During a shift change, arriving workers should attach their locks _____ the departing workers remove theirs.
 - a. Before
 - b. After