



SECTION 4

CHAPTER 10

PERFORMING LOCKOUT/TAGOUT/TRY

Purpose

The lockout/tagout/try program, 29 CFR Part 1910.147, is designed to prevent incidents through the use of proper lockout/tagout/try techniques that apply to:

- employees
- property
- equipment

This chapter outlines the servicing and maintenance of machines and equipment in which the unexpected energization or start-up of the machines or equipment, or release of stored energy could cause injury to employees. The goal of the company is to verify a “zero energy state” after LO/TO/TRY is applied before beginning maintenance or repair on equipment.

Scope

The program applies to all company facilities, including machinery and equipment at the yard as well as rigs, trucks, and other equipment wherever it is located.

This policy applies to all company employees and contractors working on company equipment wherever it is located.

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General Policy

Purpose The lockout/tagout/try program has been designed to prevent injuries to workers by isolating potentially hazardous energy while equipment is in service, performing maintenance, or repairs.

This document outlines the:

- times when the program is needed (JSA)
- responsibilities of personnel under the program
- consequences for noncompliance

Using lockout/tagout procedures

Lock out and tag out potential energized sources on equipment or machines before:

- beginning work tasks
- maintaining or repairing equipment
- removing or bypassing a guard or safety device (Management of change process must be completed prior to work activities. For more information refer to *Management of Change* in this manual.
- entering a confined space (Refer to *Entering a Confined Space*)

Responsibilities of supervisors

Supervisors will ensure compliance with this program by:

- leading the “lockout/tagout” program
- stopping work and correcting non-compliance
- administer discipline when applicable

Responsibilities of employee

Employees who have been trained in the “Lock-out/Tag-out/Try” program and whose jobs require working with machinery that could release hazardous energy are authorized and expected to:

- obtain proper training
- notify the supervisor before locking or tagging out equipment for repair
- implement the lockout/tag-out program
- follow the appropriate lockout/tagout/try procedures

Do not touch equipment with which you are not familiar



Responsibilities of the Yard Manager

The Yard Manager and/or designee is the Program Administrator and is responsible for:

- maintaining this program and communicating it to:
 - all employees and their authorized representatives
 - all contractors
 - contractor employees performing work at a Company location
- developing, implementing, and documenting proper safe work procedures
- helping each Supervisor to:
 - implement the program
 - develop written lock-out procedures for specific types of equipment
 - develop a site-specific written checklist identifying the steps for energy isolation
 - equip every authorized employee with locks and tags meeting the standards for this program
 - complete a JSA for job tasks
 - conducting and documenting site-specific training that covers:
 - types of hazardous energy
 - methods for controlling energy
 - how this program works
 - conducting the required periodic inspections of control procedures
 - documenting required inspections as well as any changes resulting from them

Noncompliance

The following chart describes the consequences of noncompliance.

Situations that could lead to serious injury may result in termination.

Violation	Consequence
An employee does not properly implement a required lockout/tagout procedure. <u>Note:</u> This includes supervisors in charge	<ul style="list-style-type: none"> • Disciplinary action • Possible termination
An employee uses equipment (locks, tags, or signs) specially identified for the program for another purpose	<ul style="list-style-type: none"> • Disciplinary action • Possible termination
An employee removes a lock he or she did not place. <u>Note:</u> See the section titled <i>Removing Another Employee's Lock</i> for exceptions to this rule.	Immediate termination



Dealing with Contractors

Purpose This document explains the Company's policies regarding contractors and lockout procedures.

Establishing Lock-out procedures Before any contractor begins work on any Company equipment wherever it is located, the supervisor and the representative of the contractor will exchange lockout procedures and agree on the procedures to be used. The contractor's procedures must meet Company requirements.

The supervisor will advise employees of the contractor's procedures. An employee who fails to comply with the contractor's procedures will receive the same disciplinary action as one who violates Company policies.

Contractors may supply their own locks.

The Company will lock out Company machines and equipment before the contractor will be allowed to apply their locks.

Noncompliance **IF** a contractor fails to adhere to the program, **THEN** he or she will stop all work until the deficiencies are corrected.

Contractors who fail to correct deficiencies in a timely manner will **not** continue to work for the Company.



Standards for Lockout Devices

Purpose This document describes Company standards for the locks and tags to be used in a lockout/tagout procedure.

Locks Any durable metal lock is acceptable.

Locks will have individual keys (no locks may have identical keys). One key will be kept by the authorized employee who “owns” the lock.

Do **not** keep spare keys on location.

Tags All Company “Information Tags” must be:

- at least 3" by 5"
- constructed of durable plastic
- designed to withstand adverse weather conditions and corrosive environments

Each tag must say “DANGER, Do Not Operate.”

One side of the tag will have space for the date and signature of the person attaching the tag. The other side will have space to write the reason for the lock-out.

Note: “Tagout Tags” and “Information Tags” may **not** be used in place of lockout locks.

Protective materials and hardware Other appropriate materials or hardware may be required to accomplish the lockout. Some examples include:

- chains
- cables
- wedges
- blocks
- adapter pins
- lock-out “scissors” to accommodate multiple locks
- valve handle covers



Preparing for Shutdown

Purpose This document outlines the procedures for preparing for a shutdown.

Procedure Follow this procedure to prepare for a shutdown.

Step	Action						
<p>1</p>	<p>Equipment listings and surveys will identify:</p> <ul style="list-style-type: none"> • all sources of potential hazardous energy • the devices that control that energy • methods that will be used to isolate the equipment <table border="1" data-bbox="581 814 1414 1079"> <thead> <tr> <th data-bbox="581 814 997 856">IF...</th> <th data-bbox="997 814 1414 856">THEN...</th> </tr> </thead> <tbody> <tr> <td data-bbox="581 856 997 968">any questions arise about a source or a method to be used,</td> <td data-bbox="997 856 1414 968">consult the job supervisor before proceeding</td> </tr> <tr> <td data-bbox="581 968 997 1079">the job supervisor cannot answer the question,</td> <td data-bbox="997 968 1414 1079">consult the Yard Manager, designee, or the local safety representative</td> </tr> </tbody> </table>	IF...	THEN...	any questions arise about a source or a method to be used,	consult the job supervisor before proceeding	the job supervisor cannot answer the question,	consult the Yard Manager, designee, or the local safety representative
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<p>2</p>	<p>Determine whether other operations that might not be readily apparent would be impacted by the work to be done.</p>						
<p>3</p>	<p>Notify employees, contractor employees, and any other affected persons of the impending equipment/system shutdown and of the lockout status</p>						



Applying Lockout/Tagout

Purpose This document describes the individual steps of applying a lockout/tagout.

Training Only experienced, trained, and competent personnel are authorized to lock out equipment.

Training for most equipment will happen on-the-job. **IF** you are not familiar with the equipment being locked out, **THEN** check the manufacturer's manual or program administrator before beginning the lockout/tagout procedures.

Special cases Some power and mechanical equipment cannot be locked out or tagged out using the procedures in this document. **IF** working with this equipment, **THEN** follow the procedures outlined below.

Equipment Type	Required Actions
Power equipment without points to lock-out or tag-out	<ul style="list-style-type: none"> Isolate and tag all power sources. Lock and tag the electrical box.
Mechanical equipment that cannot be locked out	<ul style="list-style-type: none"> Isolate power source and tag out Remove the ignition key or disconnect the battery

Locking out equipment Authorized employees working on the equipment must confirm that the equipment is de-energized and locked out. An authorized employee will apply his/her lock to the equipment before servicing it. Use the following procedure to lock out equipment.

Step	Action
1	The authorized employee must communicate to all affected employees the reason and procedure for applying LO/TO.
2	Clear the area of unauthorized personnel and unnecessary equipment.
3	De-energize the equipment
4	The authorized employee will apply his or her locking device to block the flow of energy from a power source to a piece of equipment. In addition to a locking device, a Tag must serve as a



	visible, written warning not to restore energy. It shall include the workers name, date, and the work being performed.
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Step	Action
5	<p>Dissipate or restrain stored energy in:</p> <ul style="list-style-type: none"> • capacitors • elevated equipment • rotating flywheels • springs • electrical, mechanical, hydraulic, pneumatic, chemical, or thermal energy <p>by applying methods such as:</p> <ul style="list-style-type: none"> • grounding • blocking • bleeding down <p>Attach a lock to these components to prevent reactivation.</p>
6	<p>Prior to commencing work, the authorized employee will operate the controls and check the systems (i.e., power on circuits, hydraulic pressure on vessels or lines, etc.) to make certain that the equipment will not move or operate (zero energy state).</p> <p><u>Note:</u> No work may proceed until these tests are completed satisfactorily.</p>
7	Return all controls to the “safe” or “off” position.
8	The equipment is now locked out. Double check the locks and then <i>proceed</i> with servicing the equipment.

Informing personnel

IF there is a change in personnel or shift change while work is in progress, **THEN** show all personnel the locked out and tagged out equipment and explain the Lock Out/Tag Out/Try purpose.



Restoring Equipment to Service

Purpose This document describes the steps of returning equipment to service after a lockout.

Procedure Use the following procedure to restore equipment to service after a lockout.

Step	Action
1	Complete the work. Check that the machine or equipment components are operationally intact.
2	Replace all guards and safety devices.
3	Clear the area of unauthorized and unnecessary personnel.
4	Remove nonessential items from the work area.
5	Verify that the controls are in neutral.
6	Notify all personnel that systems are going to be restored.
7	When everyone is clear, proceed with: <ul style="list-style-type: none">• closing vents and bleeders• reconnecting piping• removing blinds• removing blocking <p><u>Note:</u> Before removing some forms of blocking, such as hydraulic cylinders or locks, you may have to re-energize the machine.</p>
8	Authorized employees may then remove their tags and locks.
9	Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

Removing Another Employee's Lock

Purpose This document describes the procedure for removing a lock placed by another employee in compliance with the lockout/tagout program.

Requesting permission The Supervisor who wishes to remove the lock must take the following steps.

Stage	Description
1	The Supervisor will make every effort to contact the authorized employee who applied the lock.
2	IF the Supervisor cannot reach the lock owner, THEN he/she will contact the Yard Manager or designee.
3	The Yard Manager or designee will verify that there is no way to reach the lock owner.
4	IF the equipment belongs to a customer, THEN the Supervisor will contact the customer and obtain permission to cut the lock.
5	The Supervisor will inspect the machine or equipment and describe its condition to the Yard Manager or designee. IF permits are required to operate the machine, THEN the Supervisor will review all relevant paperwork.
6	IF the Yard Manager or designee, supervisor, and when appropriate, customer are satisfied that the machine or equipment has been properly repaired and is ready for service, THEN the Yard Manager or designee may authorize the Supervisor to remove the lock with a bolt cutter, hacksaw, or cutting torch.
7	The Supervisor will notify the local HSE Coordinator and note on the Daily Time Ticket that the locks were removed with permission. IF the equipment belongs to a customer, THEN the Supervisor will note on the customer work order that the locks were removed with permission.

Providing Employee Training

Purpose This document describes the type and frequency of training necessary for the lockout/tagout program.

General training All employees will receive annual training covering:

- the purpose of the lockout/tagout/try program
- where to go with questions about the program
- how to recognize source, types, and magnitudes of hazardous energy that they may encounter in the yard, on location, or mobile equipment
- the location and operation of isolation and control devices, including site-specific equipment used in the lockout program
- the program's rules and the consequences of noncompliance

Training authorized employees All employees who are authorized to implement lockout/tagout/try will participate in the above training as well as annual training covering:

- when the lockout procedure is required
- the methods and equipment for isolating and controlling hazardous energy
- the procedures for returning equipment to production or service
- the action to take whenever there are questions relating to the application of a lockout

Training after changes All employees shall receive additional training promptly after:

- introduction of new equipment that represents a new hazard to the workplace
- a change in the equipment used in the lockout program, including
 - types of locks
 - method of employee/lock identification
 - isolation devices
- the job assignments of the affected and authorized employees change
- the periodic audit of program compliance detects inadequacies in an employee's knowledge or use of energy control procedures



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- Documentation** Documentation of training for all employees will be kept at the area yard and will include:
- a sign-in sheet
 - a test of knowledge
 - a copy of the material covered in training
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Auditing the Lockout/Tagout Program

Purpose	This document describes the Company's policies on auditing the lockout/tagout/try program.
Inspecting operations	<p>The Yard Manager will periodically inspect operations to determine employee understanding of and compliance with the LO/TO/Try program. He or she will</p> <ul style="list-style-type: none">• document the results of these inspections on a field/location inspection form• maintain the records in a local file until the next audit has been completed
Inspecting Lock-outs	<p>The Yard Manager or designee will also periodically inspect maintenance activities where the lockout program has been implemented and will review with each employee his or her understanding of procedures and personal responsibilities.</p> <p>Documentation of these inspections shall include:</p> <ul style="list-style-type: none">• identification of the equipment or process involved• date of the inspection• the names of the employees interviewed and a summary of their comprehension of the procedures• the name of the inspector• whether each authorized and/or affected employee has been trained and updated• whether any new equipment added has specific lockout procedures developed and documented for it• current procedures are adequate for performing lock-outs of equipment <p>The Yard Manager or designee may choose a representative to perform the audit; however, the audit must be performed by an authorized employee who is not conducting the lockout/tagout/try procedure.</p>
Following up on an audit	Whenever the audits of the program reveal inadequacies, corporate safety will revise the program and implement all changes.

Documenting Specific Machines

<p>Purpose</p>	<p>This document describes:</p> <ul style="list-style-type: none"> • which kinds of machines require specific documentation in the lockout/tagout/try program • which information the documentation should contain
<p>Content of documentation</p>	<p>The Yard Manager and/or designee must develop specific step-by-step shutdown and startup procedures for every machine or piece of equipment in his or her area.</p> <p>The documentation should include at least the following information:</p> <ul style="list-style-type: none"> • equipment number • equipment location • energy source (e.g., electrical, hydraulic, gas pressure, etc.) • a list of any residual energies that must be dissipated before work begins • description of isolation requirements, including: <ul style="list-style-type: none"> ○ location of isolating controls (e.g., breaker switches, valves, etc.) ○ quantity of isolating controls ○ quantity of locks required to isolate the equipment ○ other hardware required to isolate the equipment (e.g., chains, valve covers, blocks, etc.)
<p>Additional requirements of temporarily removing lockout/tagout</p>	<p>Testing or positioning of machines, equipment or components in situations which lockout or tagout devices must be temporarily removed from the energy-isolating device and the machine or equipment energized to test or position the machine, equipment or component, the following sequence of actions IN THIS ORDER will be done:</p> <ul style="list-style-type: none"> • Clear the machine or equipment of tools and materials; • Remove employees from the machine or equipment area; • Remove the lockout or tagout devices; • Energize and proceed with testing or positioning; • De-energize (Try) all systems and reapply lockout or tagout devices to continue the servicing and/or maintenance

Definitions

Purpose

- The purpose of this section is to clearly define terminology used in the Lock Out/Tag Out Program.

Definitions

- **Affected Employee**- An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under LO/TO, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.
- **Authorized Employee**- A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section.
- **Capable of Being Locked Out**-An energy isolated device is capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy-isolating devices are capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy-isolating device or permanently alter its energy control capability.
- **Energized**- Connected to an energy source or containing residual or stored energy.
- **Energy-Isolating Device**-A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a line valve; a block; and any other similar device used to block or isolate energy. Push buttons, selector switches and other control type devices are not energy-isolating devices.
- **Energy Source**- Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.
- **Lockout**- The placement of a lockout device on an energy-isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.
- **Lockout Device**- A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.

- **Servicing and/or Maintenance**- Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or start up of the equipment or release of hazardous energy.
- **Setting Up**- Any work performed to prepare a machine or equipment to perform its normal operation
- **Tagout**- The placement of a tagout device on an energy-isolating device, in accordance with an established procedure, to indicate that the energy –isolating device and the equipment being controlled may not be operated until the tagout device is removed.
- **Tagout Device**- A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy-isolating device in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled may not be operated until the device is removed.
- **Try**- Verification of a Zero Energy State to ensure all energy has been removed.