



# Control of Hazardous Energy – Lockout/Tagout (LOTO) Shore Tactics, Techniques, and Procedures (TTP)



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## COAST GUARD TACTICS, TECHNIQUES, AND PROCEDURES 4-07.2

Subj: CONTROL OF HAZARDOUS ENERGY – LOCKOUT/TAGOUT (LOTO) SHORE TACTICS, TECHNIQUES, AND PROCEDURES (TTP)

Ref: (a) The Control of Hazardous Energy (Lockout/Tagout), 29 CFR § 1910.147  
(b) Electrical, 29 CFR 1910 Subpart S  
(c) Safety and Environmental Health Manual, COMDTINST M5100.47 (series)  
(d) Equipment Tag-Out Procedure, COMDTINST 9077.1 (series)  
(e) Lockout and Tagging of Circuits, 29 CFR § 1926.417  
(f) Shipyard Employment, 29 CFR § 1915

1. PURPOSE. To provide the commanding officer or officer-in-charge (CO/OIC) with Coast Guard tactics, techniques, and procedures (CGTTP) to develop, implement, maintain, and audit a Control of Hazardous Energy Program.
2. ACTION. This CGTTP publication applies to all U.S. Coast Guard (USCG) employees and contract employees under direct contract to a USCG associated, shore-based facility who perform equipment operation, repair, or maintenance. Internet release authorized.
3. TTP AFFECTED. None.
4. DISCUSSION. During the servicing or repair of equipment or machinery, energy sources are controlled through the use of tags or locking devices. The term lockout/tagout (LOTO) refers to isolating or removing any stored energy associated with shore-based facility equipment. The terms lockout/tagout and control of hazardous energy are synonymous. Common types of stored energy include: electrical, steam, hydraulic, pneumatic, gravity, chemical, and stretched or compressed springs. Lockout/tagout is required when servicing machinery, equipment or components, when any guard or safety device is bypassed, when it is necessary to place any part of the body into any hazardous area on a piece of equipment, or where there is a danger zone associated with any equipment, machinery, or pressurized system.

This TTP publication was authored and validated by accomplished performers and subject matter experts in the field. TTP publications adhere to a lifecycle maintenance periodicity unless triggered by other revision requirements.

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By Direction of Commander,  
Force Readiness Command

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# Chapter 1: Introduction

## Introduction

This chapter introduces the topic of controlling hazardous energy (lockout/tagout) within Coast Guard shore-based facilities. It describes the contents of this tactics, techniques, and procedures (TTP) publication, its intended audience, and defines roles and responsibilities with regard to the risk of hazardous energy. It also defines the use of notes, cautions, and warnings in this publication.

## In This Chapter

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This chapter contains the following sections:

Section	Title	Page
A	Overview	1-2
B	Notes, Cautions, and Warnings	1-5

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## Section A: Overview

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### A.1. Overview

This TTP publication is guided by the Occupational Safety & Health Administration (OSHA) standards and Coast Guard policy on occupational health and safety:

- Reference (a), The Control of Hazardous Energy (Lockout/Tagout), 29 CFR § 1910.147.
- Reference (b), Electrical, 29 CFR § 1910 Subpart S.
- Chapter 14: Isolation of Energy Sources (Lockout/Tagout) of reference (c), Safety and Environmental Health Manual, COMDTINST M5100.47 (series).
- Reference (d), Equipment Tag-Out Procedure, COMDTINST 9077.1 (series) for small boat maintenance units (in or out of the water, or in shipyards) and cutters.

Reference (c) requires compliance with reference (a). References (b) and (d) provide allowances for hazardous energy control programs that comply with reference (c).

During the servicing or repair of equipment or machinery, energy sources are controlled by using tags or locking devices. The term lockout/tagout (LOTO) refers to isolating or removing any stored energy associated with shore-based facility equipment. The terms lockout/tagout and control of hazardous energy are synonymous. Common types of stored energy include:

- Electrical.
- Steam.
- Hydraulic.
- Pneumatic.
- Gravity.
- Chemical.
- Stretched or compressed springs.

Lockout/tagout is required:

- When servicing machinery, equipment, or components.
- When any guard or safety device is bypassed.
- When it is necessary to place any part of the body into any hazardous area on a piece of equipment.

- Where there is a danger zone associated with any equipment, machinery, or pressurized system.

For additional guidance see reference (e), Lockout and Tagging of Circuits, 29 CFR § 1926.417.

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## A.2. Background

The sector commander, commanding officer or officer-in-charge (CO/OIC) implements and follows a comprehensive lockout/tagout program as identified in this TTP publication and in reference (d), Equipment Tag-Out Procedure, COMDINST 9077.1 (series). The CO/OIC designates in writing individuals responsible for carrying out the policy in reference (d). All United States Coast Guard employees and contract employees under direct contract to a USCG associated shore-based facility, or performing equipment operation, repair, or maintenance are required to be familiar with the following as defined in the unit lockout program:

- Equipment to be locked out at a unit.
- The locally developed procedures on how to properly bring the equipment to a neutral state.
- How to isolate the equipment.
- Hazards associated with affected systems/equipment.

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## A.3. Scope

This TTP publication provides steps for the CO/OIC to develop, implement, maintain, and inspect a Control of Hazardous Energy Program.

Ship and boat repair activities, including those taking place on Coast Guard shore facilities, do not fall within the scope of this TTP publication. Coast Guard shipyards and Coast Guard employees engaged in ship/boat repair activities refer to reference (f), Shipyard Employment, 29 CFR § 1915.

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## A.4. Employee Roles

Per reference (a), The Control of Hazardous Energy (lockout/tagout), 29 CFR § 1910.147:

*Authorizing officer (AO):* Establishes and manages the written Control of Hazardous Energy Program. Conducts periodic program inspections.

*Authorized employee (an individual):* Conducts the procedures for controlling the hazardous energy of machines or equipment in order to perform maintenance according to the unit program. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under reference (a). The authorized employee can perform an individual lockout operation or be a part of a group lockout operation.

*Group lockout leader:* An authorized employee who oversees and manages the group lockout of machines or equipment in order to perform servicing or maintenance.

*Affected employee:* Operates or uses machinery or equipment on which servicing or maintenance is being performed under lockout or tagout, or works in an area in which such work is being performed.

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## Section B: Notes, Cautions, and Warnings

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**B.1. Overview** The following definitions apply to notes, cautions, and warnings found in this TTP publication.

**NOTE:** **An emphasized statement, procedure, or technique.**

**CAUTION:** **A procedure, technique, or action that, if not followed, carries the risk of equipment damage.**

**WARNING:** *A procedure, technique, or action that, if not followed, carries the risk of personnel injury or death.*

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## Chapter 2: Developing and Implementing a Control of Hazardous Energy Program

**Introduction** This chapter discusses how to develop a Control of Hazardous Energy Program and identifies the key components needed for implementation.

**In This Chapter** This chapter contains the following sections:

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## Section A: Control of Hazardous Energy Program

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### A.1. Developing the Written Program

Review the requirements of the underlying Coast Guard policy and OSHA regulations. Establish a written program for the control of hazardous energy per reference (c), Safety and Environmental Health Manual, COMDTINST M5100.47 (series). Identify each system, piece of machinery, and piece of equipment in the program with the exception of items meeting the criteria in [Section A.1.b.: Equipment Identification](#) of this chapter. Explain procedures for notifying affected personnel of intended shutdown and work. Detail specific shutdown procedures, shift changes, group lockouts, contract operations, and program inspections.

To assist in customizing your program, use the Control of Hazardous Energy Template found on the [Control of Hazardous Energy – Shore TTP Library](#) page. Use the instructions, provided in red italics, in the template to fill out the unit specific information. Identify qualified personnel to perform the lockout per reference (c) and reference (a), Control of Hazardous Energy (Lockout/Tagout), 29 CFR § 1910.147.

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#### A.1.a. Shore Asset Management (SAM) Application

The USCG Shore Infrastructure Logistics Center (SILC) maintains a computerized maintenance management system called the Shore Asset Management (SAM) application. The application is the standard tool for tracking facility maintenance. The work order module permits entry of control of hazardous energy procedures on individual work orders or standard job plans. As a best practice, units can use this module to maintain lockout/tagout procedures.

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#### A.1.b. Equipment Identification

Identify all machinery, equipment, and facility support systems (e.g., boilers, compressors, air conditioning units) in the unit's written Control of Hazardous Energy Program, with the exception of those specifically mentioned in section (c)(4)(i) of reference (a).

**NOTE:**

**Not all equipment is required for inclusion in the written program. See enclosure (6) of the Control of Hazardous Energy Template found on the [Control of Hazardous Energy – Shore TTP Library](#) page for details.**

**NOTE:** **Address a group of similar equipment, machinery, or systems together if their shutdown and isolation methods/controls are identical.**

A.1.b.(1). Facility Assessment Using the Control of Hazardous Energy Template found on the [Control of Hazardous Energy – Shore TTP Library](#) page, identify and document all equipment not meeting the exceptions listed in [Section A.1.b.: Equipment Identification](#) of this chapter. Record them in the table in Enclosure (2) in the template.

**NOTE:** **As a best practice, use the SAM inventory as a resource in identifying fixed assets at shore facilities for control of hazardous energy purposes.**

A.1.b.(2). Energy Source Identification Using the Control of Hazardous Energy Template found on the [Control of Hazardous Energy – Shore TTP Library](#) page, identify and document the energy sources(s) for each piece of equipment identified in the facility assessment. Record them in the table in enclosure (2) of the template.

**WARNING:** ***The equipment might have more than one energy source.***

A.1.c. Secure Equipment Identify and document how to properly secure the equipment and bring it to a neutral state in the unit's Control of Hazardous Energy Program.

A.1.d. Energy Source Isolation Points Using the Control of Hazardous Energy Template found on the [Control of Hazardous Energy – Shore TTP Library](#) page, identify and document energy source isolation points. These are positive control points where a lock and tag can be directly attached or attached through the use of additional devices. Specify the exact positions of the following to ensure the equipment is, and will remain, in a neutral energy state:

- Controls.
- Valves.
- Switches and disconnects.
- Valve alignment.
- The specific position of bleed valves/ports.

- The use of blanking or blinding plates at flanges where valves are not available.

For example, to isolate an air compressor for maintenance:

1. Wait for the compressor to automatically cycle to the off position.
2. Set the local control to the off position.
3. Open the electrical power disconnect and lock it out.
4. Close all valves from the air receiver and lock them out.
5. Open the drain valve to the air receiver and lock it in the open position.

If more than one air compressor is connected to a common system perform a “double block, blind, and bleed” operation as follows:

1. Close and lock out a valve upstream of each compressor.
2. Open and lock open a valve in between these two closed valves.
3. Verify valve alignment in items 1 and 2 and that the air receiver drain valve on the system is locked in the open position. This prevents the system from being recharged by some other part of the system.

See the example of “double block, blind, and bleed” in [Appendix B: Equipment Examples](#).

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A.1.e. Neutral State

Using the Control of Hazardous Energy Template found on the [Control of Hazardous Energy – Shore TTP Library](#) page, identify sources of potential energy and how to release the energy or bring a system to a neutral state. Clearly identify all valves, switches and controls, and the position of each necessary to attain and maintain a neutral state. Provide detailed steps to lock out specific valves, switches or disconnects in order to obtain and maintain the equipment, system, or machine in a neutral state.

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A.1.f. Isolation Testing

For each piece of equipment identified in [Section A.1.b.: Equipment Identification](#) of this chapter, define the steps to be taken to ensure the energy has been isolated and will remain isolated. Steps taken to test energy isolation are often a matter of attempting to restart a piece of equipment using normal, alternate, or emergency start sequences. The program ensures all steps, short of removing locks and tags, are taken to restart equipment. Fully defining the isolation testing process prior to starting work is a safeguard to prevent inadvertent startup or movement of machinery.

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A.1.f.(1).  
Isolation Test  
Satisfied

Include guidance in the unit's Control of Hazardous Energy Program regarding the satisfaction of an isolation test. Once satisfied the system will not restart, the employee initiating the lockout is permitted to work on the affected equipment. Provisions for group lockout are addressed in [Section C: Group Lockout](#) in this chapter.

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**A.2. Incidental  
Operation**

Often during maintenance, equipment has to be cycled, operated, rotated, or run to perform diagnostic testing or temporarily started to reposition or to move components for additional maintenance. In these cases the unit's Control of Hazardous Energy Program needs to instruct the authorized employee to:

1. Notify all affected employees the equipment energy source will be restored.
2. Remove all tools and maintenance equipment from the work area.
3. Verify all employees are clear of the machinery.
4. Temporarily remove locks and tags.
5. Temporarily restore the systems to normal operation conditions.

Once incidental operation is complete, return the systems to a neutral state, and lock and tag out the equipment using the same procedures used for the initial isolation.

**WARNING:**

*During temporary procedures, reinstall the guards, interlocks, and other safeguards, or install additional safeguards to prevent personnel injury and prohibit personnel entry to areas where injury can occur.*

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**A.3.  
Implementation**

After developing the unit's Control of Hazardous Energy Program, implement it by informing and training employees on the program as indicated in [Chapter 3: Training](#). Update the program upon any change in equipment inventory, lockout/tagout procedures, or identified deficiencies.

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## Section B: Performing Lockout and Tagout

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**B.1. Introduction** This section describes the steps necessary to properly lock out or tag out a piece of equipment or machinery.

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**B.2. Notify Affected Personnel**

Authorized employees notify affected personnel of the pending lockout/tagout of equipment. Notification is an essential safeguard for:

- Personnel who typically operate the equipment.
- Personnel whose work will be affected by securing the equipment.
- Personnel in the immediate area of the equipment.

Notify all personnel to not attempt to restore the equipment or machinery to operation when equipment is intentionally shut down for maintenance or other required procedures.

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**B.3. Shutdown**

Shut down the equipment using the normal shutdown sequences found in equipment or machinery operating procedures.

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**B.4. Isolate**

Install locks and tags at each isolation point identified in the unit's Control of Hazardous Energy Program.

**WARNING:**

*A tagout device is a prominent warning that clearly states the machinery being controlled must not be operated until the tag is removed per established procedure. Tags are essentially warning devices and do not provide the physical restraint of a lock. Tags can evoke a false sense of security. For these reasons, OSHA considers lockout devices more secure and effective than tagout devices in protecting employees from hazardous energy.*

Sometimes an energy isolating device can't be locked. As an employer (USCG/contractor/outside personnel), modify or replace the energy isolating device to make it capable of being locked out or use a tagout system. Per reference (a), The Control of Hazardous Energy (Lockout/Tagout), 29 CFR § 1910.147, ensure the energy isolating devices for machinery are capable of being locked out (e.g., valve, switch, or fixture has provisions to accept a lock) if employers significantly repair, renovate, or modify machinery, or install new or replacement machinery.

Per reference (a), Control of Hazardous Energy (Lockout/Tagout), 29 CFR § 1910.147, in order to use a tagout device on an energy isolating device capable of being locked out, the employer develops and implements the tagout in a way that provides employees with a level of protection equal to that achieved through a lockout system.

As an employer, comply with all tagout-related provisions of reference (a). Train employees in the limitations of tags when using a tagout system. Provide hazardous energy control training for all employees.

**NOTE:**

**The scope of reference (a) is not the same as the scope of reference (b), Electrical, 29 CFR 1910 Subpart S. Reference (a) is concerned with controlling hazardous energy where the worker is potentially exposed to mechanical energy (e.g., moving tool parts, rotating shafts, equipment subject to falling due to gravity). Reference (b) stipulates personnel must be trained sufficiently to recognize hazards and implement the requirements of the Control of Hazardous Energy Program. Reference (b) must be followed where there is a potential exposure to electrical energy. This includes operations as simple as testing an exposed circuit to see if it is energized. Reference (b) requires specific training to perform this level of work. To assist in determining which program applies to the work task, use the flowchart in enclosure (1) of the Control of Hazardous Energy Program Template on the Control of Hazardous Energy – Shore TTP Library page.**

**WARNING:**

*Employee (USCG member/contractor/outside personnel) status as an electrician or electrician's mate (EM) alone is not sufficient to meet the requirements of a qualified person. The electrician or EM must have the specific, documented training to be a "qualified person" under the provisions of section 332 of reference (b).*

**B.5. Test**

Perform the procedures detailed in [Section A.1.f.: Testing](#) of this chapter to ensure the equipment is and will remain in a neutral state, as described in the unit's written Control of Hazardous Energy Program.

**B.5.a. Neutral State**

Ensure the equipment is properly locked out, and all tests indicate the machinery/equipment is presently isolated and will remain in a neutral state. Once satisfied equipment is in a neutral state, the authorized employee who attached the lock and tag can begin work on the locked out equipment/machinery.

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**B.6. Restoration of Equipment**

Once all repairs are complete, the maintenance person notifies all affected personnel the work is complete. After all notifications are complete, the authorized employee:

- Removes the locks and tags.
- Restores valves and disconnects to their normal positions.
- Returns the equipment to operation using normal start-up procedures.

See [Section D.3.: Removal of Another Person's Lock](#) in this chapter, if it is not possible to remove the lock or tag.

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**B.7. Update of Documentation**

Document additional steps not indicated in the original equipment shutdown and isolation procedures. Notify supervisory personnel in writing of additional steps necessary to fully isolate and prevent unintended restart of equipment. Once the supervisor has validated these additional steps, he or she ensures the original procedures are updated and keeps a separate log noting these changes for the periodic inspections. See [Chapter 4: Periodic Inspection Requirements](#).

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## Section C: Group Lockout

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**C.1. Introduction** The use of personal lockout devices or a gang lock device is a best practice typically used for most Coast Guard maintenance operations in the control of hazardous energy. However, commands/maintenance leaders have the option of instituting a group lockout process. Whenever servicing and/or maintenance is performed by a group of employees, develop and implement an energy control procedure that provides authorized and affected employees with the same level of protection as a personal lockout or tagout device. The requirements for group lockout or tagout are detailed in section (f)(3) of reference (a), Control of Hazardous Energy (Lockout/Tagout), 29 CFR § 1910.147.

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**C.2. Group Lockout Leader** When using group lockout/tagout procedures, a single authorized employee acts as the group lockout leader for the operation. The group lockout leader assumes the overall responsibility for the control of hazardous energy for all members of the group while the servicing or maintenance work is in progress.

Group lockout leader responsibilities include:

- Implementing the energy control procedures.
- Communicating the purpose and timing of the operation to the servicing and maintenance employees.
- Coordinating the operation.
- Ensuring all procedural steps are properly completed.

**WARNING:**

*In such operations, it is critical that each authorized employee involved in the group lockout/tagout activity be familiar with the type and magnitude of energy potentially present during the servicing and maintenance work.*

---

**C.3. Role of the Authorized Employee** In addition, each authorized employee involved in the group lockout:

- Verifies that the equipment was properly deenergized (brought to a neutral state).
- Affixes his or her personal lockout or tagout device to the group lockout device, group lockbox, or comparable mechanism, before engaging in the servicing and maintenance operation. See [Appendix B: Equipment Examples](#) for examples of lockout/tagout devices.

Additionally, the lockout or tagout device informs other personnel that the employee is working on the equipment. Keep the device attached, so the authorized person in charge of the group lockout or tagout (group lockout leader) knows that the work has not been completed and that it is not safe to reenergize/restore the equipment.

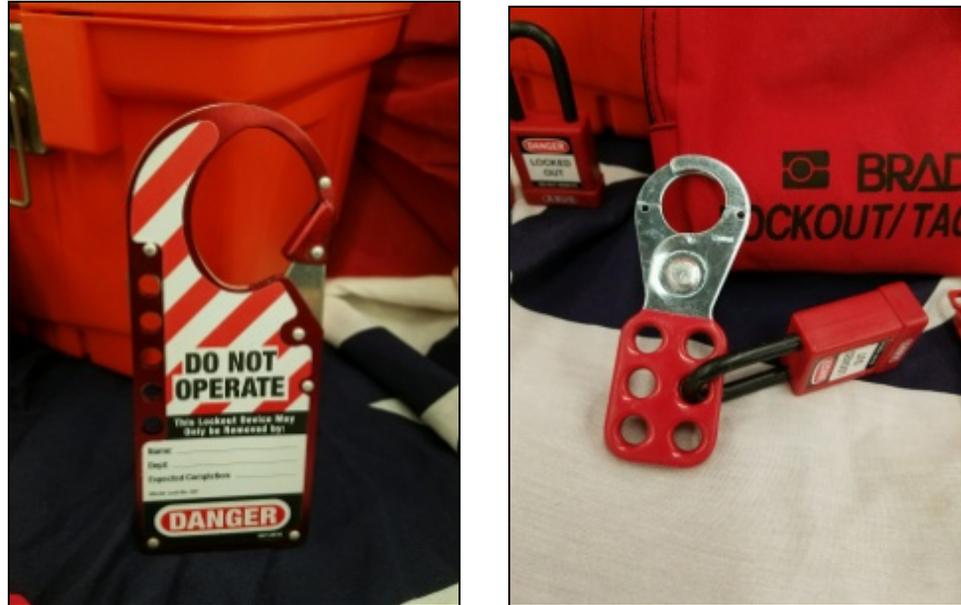


Figure 2-1 Examples of group lockout devices

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#### C.4. Removal of Lockout/Tagout

The authorized employee in charge of the group lockout or tagout (group lockout leader) must not remove the group lockout or tagout device until each employee in the group has removed his or her personal device. The removal of an employee's personal device indicates he or she is no longer exposed to the hazards from the servicing operation.

When the activities involving group lockout or tagout extend into another work shift, or there is a change of authorized employees, the provisions for shift or personnel changes must also be followed (see [Section D: Shift Changes](#) of this chapter).

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#### C.5. Work Authorization Permits

As a best practice, the authorized employee acting as the group lockout leader, uses a work authorization permit to achieve compliance with group lockout/tagout provisions. Include work authorization permit instructions in the employer's written procedures regarding pertinent maintenance and repairs. Identify in the work authorization permit:

- Equipment to be serviced.
- Types and unique energy characteristics encountered.

- Methods for safe work.
- Process or procedures used to accomplish the task.

See the sample LOTO Work Permit on the [Control of Hazardous Energy – Shore TTP Library](#) page.



Figure 2-2 An employee attaching a lockout device to an electrical panel

## Section D: Shift Changes

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- D.1. Introduction** Per reference (a), The Control of Hazardous Energy (Lockout/Tagout), 29 CFR § 1910.147, develop specific procedures to transfer the control of locked out equipment or machinery during shift or personnel changes. Incorporate these procedures into your unit’s written Control of Hazardous Energy Program.
- 
- D.2. Procedures** Define the handoff process between shift or personnel change. For complex equipment, define detailed handoff procedures. However, in most cases, the steps are as follows:
1. Departing personnel walk through the facility with the incoming personnel.
  2. Departing personnel remove their lock and tag.
  3. Incoming personnel verify the equipment is in a neutral state and address any concerns they have about the status of repairs or lockout condition.
  4. Incoming personnel install their own lock and tag.
- 
- D.3. Removal of Another Person’s Lock** When the authorized employee who applied a lockout or tagout device is not available to remove it, the device can be removed under the direction of the AO. Provide specific procedures and training for removal of another person’s lock in the unit’s Control of Hazardous Energy Program. The specific procedures include the following elements:
- The AO verifies the authorized employee who applied the device is not at the facility.
  - The unit makes all reasonable efforts to contact and inform the authorized employee that his or her lockout or tagout device has been removed.
  - The unit ensures that the authorized employee has knowledge of the removal before he or she resumes work at the facility.
  - The AO demonstrates the procedures provide an equal measure of safety in the removal of the device as if the authorized employee who applied it were removing it.
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## Section E: Outside Personnel Operations

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### E.1. Policy Notifications

A CG unit can host outside personnel such as commercial contractors or temporarily assigned CG members from other units to perform work at their unit. CG personnel performing work at another unit follow their home unit's program. In case of conflicting procedures between the host unit and the home unit programs, follow the home unit's procedures. Per reference (a), The Control of Hazardous Energy (Lockout/Tagout), 29 CFR § 1910.147, outside personnel other than CG personnel are informed of the unit's policy on the use of locks and tags, and are notified about the prohibition of attempts to restart or reenergize equipment or machines that are locked out or tagged out. Outside personnel also provide details of their program to the host unit.

### E.2. Certification Form

A dual responsibility to inform and comply with regulatory requirements exists between the host unit and the outside personnel performing work per:

- Reference (b), Electrical, 29 CFR 1910 Subpart S.
- Reference (c), Safety and Environmental Health Manual, COMDTINST M5100.47 (series).

The unit obtains information about the outside personnel's lockout/tagout procedures and discusses them with the on-site representative. As part of the exchange of information, the outside personnel representative signs the certification form. The form is enclosure (8) of the Control of Hazardous Energy Program Template on the [Control of Hazardous Energy – Shore TTP Library](#) page discussed in [Chapter 3: Training](#). If there are no significant changes to the outside personnel or unit programs since the date on the last signed outside personnel certification on file, additional signed certification is not necessary.

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## Chapter 3: Training

**Introduction** This chapter outlines the training needed for affected employees involved in the control of hazardous energy.

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**In This Chapter** This chapter contains the following sections:

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A	Control of Hazardous Energy (Lockout/Tagout) Training	3-2

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## Section A: Control of Hazardous Energy (Lockout/Tagout) Training

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### A.1. Employees Requiring Training

Training is required per:

- Reference (a), The Control of Hazardous Energy (Lockout/Tagout), 29 CFR §1910.147.
- Reference (c), Safety and Environmental Health Manual, COMDTINST M5100.47 (series).

Train all employees whose work operations are or could be in an area where energy control procedures are used, regarding the lockout/tagout program prior to:

- Using the applicable equipment.
- Servicing the equipment.
- Interacting with the equipment.
- Working in the vicinity of the equipment.

Specific training will vary from shop to shop, and even by shop member, depending upon the complexity of the applicable equipment the employee works on and the procedures used.

---

### A.2. Employee Training and Refresher Training

Provide training and refresher training to all affected employees.

- Train and retrain employees in the duties and responsibilities outlined in section (c) (7) of reference (a).
- In addition to refresher training requirements of reference (a), provide refresher training every three years for all authorized and affected employees per chapter 14 of reference (c).

---

### A.3. Documentation

Maintain documentation of lockout/tagout training and retraining, including at minimum, each trained employees' name and date of training. Document periodic training and any required retraining in the Training Management Tool (TMT) to satisfy the requirements of section (c) (7) of reference (a).

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### A.4. Training Resources

Health Safety & Work-Life Service Center (HSWL SC) resources available on the [Control of Hazardous Energy – Shore TTP Library](#) page:

- Control of Hazardous Energy (LOTO) presentation.
  - Video Lending Library.
-

## Chapter 4: Periodic Inspection Requirements

**Introduction** This chapter discusses the process the unit uses for conducting and documenting periodic inspections of its procedures for controlling hazardous energy.

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A	Control of Hazardous Energy Program Periodic Inspections	4-2

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## Section A: Control of Hazardous Energy Program Periodic Inspections

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**A.1. Purpose**      Verify the safety procedures in shoreside facilities by conducting control of hazardous energy inspections, ensuring machinery and equipment are properly secured before the completion of maintenance or servicing work.

**A.2. Process**      Conduct periodic inspections of the energy control procedures for all equipment at the facility. Group inspections of similar machinery types if the energy control procedures are the same. Verify the requirements of reference (c), Safety and Environmental Health Manual, COMDINST M5100.47 (series), are met by performing periodic inspection. Spread inspections, required annually per reference (c), over the entire year.

The AO:

- Ensures inspections are performed by an authorized employee other than the one(s) using the energy control procedure being inspected.
- Corrects and documents any deviations or inadequacies identified during the inspection.
- Where lockout is used to control energy, discusses and reviews the inspection with the inspector and each authorized employee.

The inspector:

- Where lockout is used to control energy, reviews the employees' responsibilities per the energy control procedure being inspected.
- Where tagout is used, reviews with each authorized employee the energy control procedure being inspected and the following requirements per reference (a), The Control of Hazardous Energy (Lockout/Tagout), 29 CFR §1910.147:
  - Do not remove tags attached to an energy-isolating means without authorization from the individual responsible for said tag. This tag is never to be bypassed, ignored, or otherwise defeated.
  - Tags are legible and comprehensible by all authorized employees, affected employees, and all other employees who might work in the vicinity.
  - Tags and their means of attachment are constructed of durable materials that will withstand the environmental conditions encountered.

- Tags are attached to equipment's energy-isolating device in a secure fashion to prevent inadvertent or accidental detachment during use.
  - The authorized employee inspecting the procedure(s) certifies completion of periodic inspections. Using the periodic inspection form, enclosure (7) in the Control of Hazardous Energy Template found on the [Control of Hazardous Energy – Shore TTP Library](#) page, document the inspection. The items below are required parts of inspection documentation per reference (a), The Control of Hazardous Energy (Lockout/Tagout), 29 CFR § 1910.147.
    - Machine or equipment that the energy control procedure is securing.
    - Date of the inspection.
    - Employees participating in the inspection.
    - Name of employee performing the inspection.
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## Appendix A: Glossary and Acronyms

<b>Affected Personnel</b>	Personnel whose work will be affected by securing equipment via lockout or tagout, who typically operate the equipment or are in the immediate area of the equipment.
<b>Authorizing Officer (AO)</b>	Per reference (c), Safety and Environmental Health Manual, COMDTINST M5100.47 (series), the authorizing officer establishes and manages the written Control of Hazardous Energy Program. In addition, he or she ensures annual program inspections are completed per reference (c).
<b>Authorized Employee</b>	A single employee responsible for the control of hazardous energy for members of a group or as an individual during lockout procedures.
<b>Blanking/Blinding</b>	Blanking or blinding is the absolute closure of a pipe, line, or duct. It is accomplished by fastening a solid plate (such as a spectacle blind or a skillett blind) completely covering the bore or opening. The closure is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the covering.
<b>CFR</b>	Code of Federal Regulations.
<b>CGTTP</b>	Coast Guard tactics, techniques, and procedures.
<b>CO</b>	Commanding officer.
<b>Contractors</b>	Employees of commercial companies hired to perform construction, service, or maintenance.
<b>DOD</b>	Department of Defense.
<b>Double Block, Blind, and Bleed</b>	The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves. At the same time opening and locking or tagging a drain or vent valve in the line between the two closed valves. Blinding is the addition of blinding plates after the closed valve.
<b>EM</b>	Electrician's mate.

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<b>Employee</b>	A USCG member, a contractor, or outside personnel who performs work in an area where the control of hazardous energy can be a concern.
<b>Employer</b>	The USCG, a contractor, or outside personnel responsible for employees performing work within the realm of this TTP publication.
<b>Energy Isolating Device</b>	<p>A mechanical device that physically prevents the transmission or release of energy. Examples include:</p> <ul style="list-style-type: none"><li>• Manually operated electrical circuit breakers.</li><li>• Disconnect switches.</li><li>• Manually operated switches by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and, in addition, no pole can be operated independently.</li><li>• Line valves.</li><li>• Blocks.</li><li>• Any similar devices used to block or isolate energy.</li></ul>
<b>Energy Source</b>	Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.
<b>FC-P</b>	Force Readiness Command Tactics, Techniques, and Procedures Division.
<b>FORCECOM</b>	Force Readiness Command.
<b>Group Lockout Leader</b>	An authorized employee who is responsible for coordinating the tasks of a group lockout.
<b>HSWL SC</b>	Health, Safety & Work-Life Service Center.
<b>IOD</b>	Industrial Operations Division.
<b>Lockout</b>	The placement of a lockout device on an energy isolating device, per an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

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<b>Lockout Device</b>	Any device used to hold an energy isolating device in a safe position and to prevent the start-up of machinery or equipment. Whenever possible a lockout device is used along with a tagout device.
<b>LOTO</b>	Lockout/tagout.
<b>Neutral State</b>	Equipment/systems shut down, turned off, residual/stored energy is isolated or bled off.
<b>OIC</b>	Officer-in-charge.
<b>Outside Personnel</b>	Outside personnel includes contractors or Coast Guard/Department of Defense (DOD) construction, service and maintenance personnel, IOD, and sector maintenance personnel who are not under the supervision of the local command. IOD and sector facilities maintenance personnel often perform maintenance, construction, and repair activities away from their home unit. Examples include Industrial Operations Division (IOD) Industrial Shops and Sector Facilities Maintenance Shops.
<b>OSHA</b>	Occupational Safety and Health Administration.
<b>SAM</b>	Shore Asset Management. A computerized maintenance management system.
<b>SILC</b>	Shore Infrastructure Logistics Center.
<b>Tagout</b>	The placement of a tagout device on an energy isolating device, per an established procedure, to indicate that the energy isolating device and the equipment being controlled cannot be operated until the tagout device is removed.
<b>Tagout Device</b>	Any prominent warning device, incorporating a tag and a means of attachment. The device can be easily secured and fastened to an energy isolating device per an established procedure. Such a device indicates that the machine or equipment being controlled cannot be operated until the tagout device is removed. Per reference (a), The Control of Hazardous Energy (Lockout/Tagout), 29 CFR § 1910.147, tagout device attachment means shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-piece, all-environment-tolerant nylon cable tie.

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<b>TMT</b>	Training Management Tool.
<b>TTP</b>	Tactics, techniques, and procedures.
<b>USCG</b>	United States Coast Guard.
<b>Work Authorization Permit</b>	A document authorizing employees to perform specific tasks. While the lockout/tagout standard does not specifically require the use of a work authorization permit, these documents can be used as a means of achieving compliance with the group lockout or tagout requirements.

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## Appendix B: Equipment Examples

### B.1. Lock and Tag



Figure B-1 Lock and tag example

### B.2. Tag



Figure B-2 Tag example

### B.3. Lockout Devices



Figure B-3 Examples of lockout devices

### B.4. Valve Lock



Figure B-4 Example of a valve lock

Photo courtesy of Panduit: [http://www.deenergize.com/?target=Gate\\_Valves](http://www.deenergize.com/?target=Gate_Valves)

### B.5. Breaker Lock



Figure B-5 Example of a breaker lock

Photo courtesy of Garvin Industries: <http://www.garvinindustries.com/>

### B.6. Group Lockout Device, Lock Box, Lock Hasps

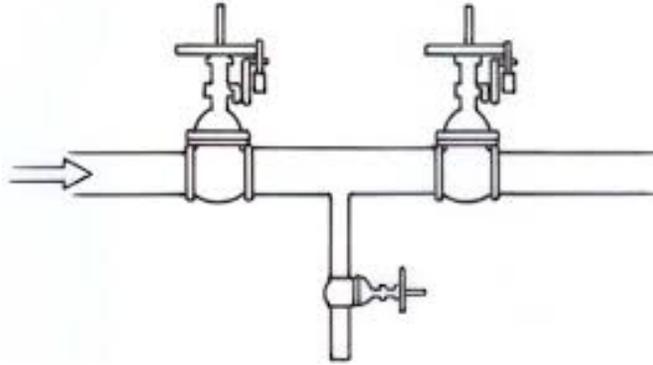


Figure B-6 Examples of group lockout device, lock box, and lock hasps

Photos courtesy of Grainger: [www.Grainger.com](http://www.Grainger.com)

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**B.7. Double  
Block, Blind, and  
Bleed**

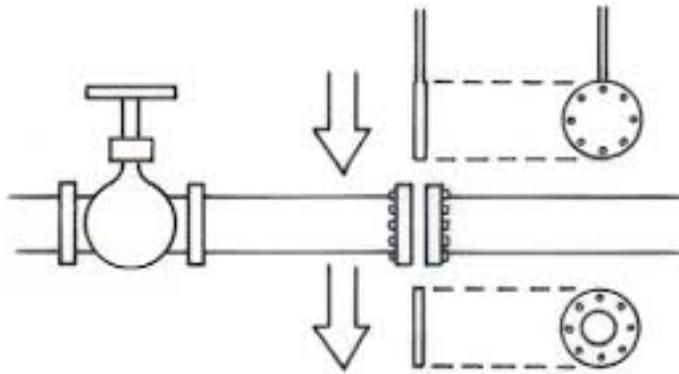


**Figure B-7 Example showing two valves with a bleed valve in the middle**

*Illustration courtesy of the Government of Alberta, Canada:*  
<http://work.alberta.ca/SearchAARC/639.html>

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**B.8. Blinding  
Plate**



**Figure B-8 Example showing a valve, followed by a spool piece and images of a blinding plate (blocks flow) and an open plate (allows flow)**

*Illustration courtesy of the Government of Alberta, Canada:*  
<http://work.alberta.ca/SearchAARC/639.html>

