

Lockout/Tagout Procedures

To prevent the unexpected startup or release of hazardous energy from machines and equipment during servicing or maintenance. **[Organization Name]** has adopted this Policy for its employees.

Introduction

This procedure applies to facilities and projects where employees are engaged in the cleaning, repairing, servicing, setting up, or adjusting of machinery, equipment, or processes that could start up unexpectedly or release stored energy.

[Organization Name] understands that employees face severe injuries, such as amputations, fractures, or even death, if this energy and start-up are not controlled.

We are committed to taking every precaution to protect employees, including establishing procedures for removing the energy supply from machines and equipment, for applying the appropriate lockout or tagout devices on the energy-isolating devices, for addressing stored or potentially accumulated energy, and for training and program review.

We comply with all local, state, and federal regulations and follows best practices.

Terms:

- **Energy-isolating device:** A mechanical device that physically prevents the transmission or release of energy.
- **Hardware:** A device that connects directly to the energy-isolating device
- **Zero energy state:** The point at which all sources of energy are removed.
- **Authorized employees:** Employees who lockout or tagout machines or equipment in order to perform servicing or maintenance.
- **Affected employees:** Employees whose jobs require them to operate or use machines or equipment that need servicing or maintenance and are in the lockout/tagout program.
- **A qualified person** means a person who is familiar with the construction and operation of the equipment and the hazards involved.

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Responsibilities

Management:

Management is responsible for supporting the lockout/tagout plan.

Plan administrator:

[Responsible Person] shall administrate the Lockout/Tagout Plan for us. The plan administrator has the following responsibilities:

- Assure you that a specific procedure for controlling the energy and locking out each machine and piece of equipment exists.
- Assuring that authorized and affected employees complete the correct training.
- Assuring that qualified persons are assigned to supervise lockout/tagout procedures.
- Coordinating the continuation of lock/tagout protection through shift or personnel changes
- Requiring that all locks are keyed differently and that only one key exists for each lock and remains in the possession of the authorized employee to whom it has been assigned.
- Coordinating all lockout and energy control activities with client, owner, contractor, and subcontractor practices and programs
- Assuring that both the organization's energy control plan and the control plan of a contractor or subcontractor are understood and followed by employees.
- Assuring that locks and tags are in good condition and are replaced if needed.
- Maintaining appropriate documentation

Supervisors of lockout/tagout:

Qualified persons shall act as front-line supervisors of lockout/tagout procedures. They have the following responsibilities:

- Observe de-energizing and the entire lockout/tagout process.
- Enforcing appropriate procedures
- Verifying that the equipment cannot be restarted after being locked out.
- Conducting tests and visual inspections prior to re-energizing to assure safety.

- If applicable, overseeing group lockout.

Authorized employees are responsible for:

- Completing the appropriate level of training on lockout/tagout
- Following all procedures when locking and tagging out machines

Affected employees are responsible for:

- Completing the appropriate level of training on lockout/tagout
- Never working on a machine that is locked out and never tampering with a lock or tag

Contractors or outside servicing personal are responsible for:

- Following the lockout/tagout standard and complying with the program
- Exchanging information with the employer about their energy control program

Hazard Assessment

[Responsible Person] shall conduct the hazard assessment to determine all the sources of hazardous energy to be controlled. This will facilitate creating specific procedures of energy control.

- Hazardous energy types include the following: electrical, mechanical, chemical, hydraulic, and pneumatic.
- In addition, the assessment will consider the following: stored or potential energy, thermal sources, and human factors.

Training

[Responsible Person] shall administrate the training program for us and keep training records. Written certification will be required to ensure employees have been trained.

For affected employees:

- Purpose and use of energy control procedures
- How to recognize when a procedure is being used
- Who is authorized to perform work?

- Restarting locked or tagged-out equipment is prohibited.

For authorized employees:

In addition to the awareness-level training, authorized employees must know:

- Policies and procedures of the energy control program
- Type and magnitude of hazardous energy sources
- The methods and means necessary for energy isolation and control.

Employees will be retrained in lockout procedures:

- When there is a change in their job assignment
- When changes in machines, equipment or processes that present a new hazard.
- Where there is a change in the actual energy control (lockout) procedures
- At least on an annual basis to ensure that all are aware of the procedures.

Lock and Tag Requirements

- **All devices** must be:
 - Durable.
 - Standard in color, shape, and appearance.
 - Substantial enough to prevent accidental removal. (Tags must have a minimum unlocking strength of 50 lbs.)
 - Labeled with the authorized employee's name.
- **Tags** must contain instructions not to operate or energize equipment and the names of employees working on the equipment. The tags must also be:
 - Readable and understandable by all employees.
 - Single use.
 - Self-locking.
 - Non-releasable.
 - Applied by hand.

Energy Control Procedures

Employees shall not work on or in equipment, vessels, etc., which are **not** in a zero-energy state. Only authorized employees may perform lockout/tagout.

Preparing for shutdown:

- Identify and locate all sources of energy that could affect individuals involved.
- Notify affected employees of activities.
 - This can be done verbally, visually, or by hanging a warning tag on the control panel.
- Identify shutdown procedures.
- Identify energy isolation devices needed.
- Determine quantity and type of lockout/tagout devices required.

Shutdown:

- Shut equipment down by its normal start/stop method.

Isolating energy sources:

- Use energy-isolating devices appropriate for the energy source, such as:
 - Manually operated circuit breakers or electrical disconnects for electrical energy.
 - Valves for pneumatic energy.
 - Blocking or bars for mechanical energy.
- All devices must be equipped with a place to attach a hasp or a lock or have a built-in locking mechanism.

Applying locks and tags:

- Locks are attached so that the device cannot be operated until locks are removed.
- Devices must be in the off position.
- Tags indicate that the device and equipment may not be operated and include the name of employees working on the equipment.
- Locks, tags, signs, and seals must be securely attached.
- The name of the authorized employee must be included.

Control residual energy:

- Release, restrain, or dissipate energy.
- Prevent the re-accumulation of energy.
- Isolate the space:
 - Blind the lines.
 - Disconnect and misalign the lines.
 - Double block the valves and bleed the residual materials.

Verify energy control methods:

- Assure that switches, valves, and other mechanisms cannot be turned on.
- Activate equipment control switches and levers and depress start buttons to assure the power is isolated.
- Return switches, levers, and buttons to the off position.
- Use a meter to ensure that electrical energy is not present.

Appropriate start-up procedures:

- Inspect area and remove all tools, rags, and other materials.
- Assure that equipment is operationally intact.
- All guards and other safety devices are replaced, if applicable.
- Notify affected employees that equipment will be restarting.
- Check the work area to assure all employees are safely positioned.
- Verify all controls are in the neutral or off position.
- Remove lockout/tagout devices.
- Notify affected employees that lockout/tagout devices have been removed and the equipment or machinery is ready for use.

Group lockout:

- When a crew or other group performs service or maintenance on equipment, a single authorized employee must assume the overall responsibility for the control of hazardous energy for all

members of the group while the servicing or maintenance work is in progress and implement the group lockout energy control procedure.

- Each person who enters the danger zone will be required to verify that the hazardous energy sources have been locked out and the keys to these locks have been secured in a group lockout box.
- Then they will affix their personal devices to the group lockout box or equivalent.
- For example, multiple valves and breakers require lockout by three people who will be working on the same piece of equipment. A lock and tag is placed on each lockout location and the keys are stored in a group lockout box. Each employee then places their personal locks on the group lockout box.
- Group lockout procedure must provide all employees **with the same level of protection** provided by an individual lockout or tagout device.

Lockout/tagout occurring over multiple shifts:

- Protection must extend between shifts.
- If work extends through the initial shift:
 - The incoming staff that will be working on the process or equipment must add their own lockout controls in accordance with standard lockout procedures.
 - The outgoing shift staff must review all work done and the status of lockouts and transfer the responsibility of lockout to the incoming shift.

Temporary operation of locked out source:

Temporary operation may be required for certain tasks, such as tests. These steps must be done by authorized employees only.

- Make sure everyone is clear of the system.
- Make sure tools are clear.
- Remove locks and tags.
- Energize the system and conduct the test if applicable.
- Immediately de-energize the system and replace locks.

When employee is not available:

Unauthorized removal of lock and tag is prohibited. Use the following procedure for a **qualified person** to remove locks and tags.

- Verify that the authorized employee is not on site and available to remove the lock and tag. Attempt to contact the authorized employee. If they could not be contacted, continue.
- Verify equipment is safe to operate, tools have been removed, and guards have been replaced.
- Notify affected employees that equipment will be restarting and check the work area to assure all employees are safely positioned.
- Verify all controls are in the neutral or off position.
- Remove lock/tag and energize equipment.
- Notify affected employees that lockout/tagout devices have been removed and the equipment or machinery is ready for use.
- Before the authorized employee who could not be contacted earlier resumes work, he or she **must be informed** that the lockout device has been removed.

Audit

The purpose of the audit is to make continuous improvements and needed corrections.

- The audit is conducted:
 - At least annually.
 - If a weakness or issue is noted.
- Audits are performed by authorized employees.
- Audits review the following:
 - Adherence to energy isolation procedures
 - Effectiveness of lockout/tagout procedures
 - Employee training
 - Assigned roles and responsibilities.
 - The authorized person's responsibilities

Audit process:

An authorized employee who is not involved in the lockout procedure for the equipment being inspected will conduct the review and inspection.

- Review equipment to ensure that lockout is effective and safe.
- Authorized employees will be subject to an oral review of machine-specific lockout procedures for equipment that they are authorized to service. This review will address the employee's responsibilities under the lockout procedure for each piece of machinery that he/she is authorized to work on.

- Authorized employees will also be subject to an observed evaluation of their proficiency in controlling hazardous energy on selected equipment that they are authorized to service.
- Any deficiencies must be corrected.

Documentation:

Audits must be documented, and the records maintained.

Each audit needs to be certified by the employer. The certificate must include the following information: the equipment being checked, the date of review, the names of employees involved, and the name of the auditor.

Records should also include information about the pieces of equipment, problems observed, and recommendations to correct those problems.

Violations

The consequences of violating this policy can be severe in terms of human suffering and loss. Violations of this policy will be handled aggressively, with a goal of determining how to improve the employee behaviors and procedures so that no similar violation will occur.

Appendix A: Lockout/Tagout Program Audit Report

	OK	Improvement Needed
1. The written program is developed and accessible.	<input type="checkbox"/>	<input type="checkbox"/>
2. Awareness-level training is provided to affected employees.	<input type="checkbox"/>	<input type="checkbox"/>
3. Full lockout/tagout training with lockout procedures for specific machinery and equipment is provided to authorized employees.	<input type="checkbox"/>	<input type="checkbox"/>
4. Skills evaluations are done as part of training.	<input type="checkbox"/>	<input type="checkbox"/>
5. Lockout/tagout supplies are readily available and good quality.	<input type="checkbox"/>	<input type="checkbox"/>
6. Locks are individually keyed.	<input type="checkbox"/>	<input type="checkbox"/>
7. Tags are readable and understandable, identify who is performing lockout, and contain instructions not to operate or energize equipment.	<input type="checkbox"/>	<input type="checkbox"/>
8. Lockout/tagout is performed for de-jamming activities.	<input type="checkbox"/>	<input type="checkbox"/>
9. Lockout/tagout is effective in that no employee can reach in or come into contact with areas where injury could occur.	<input type="checkbox"/>	<input type="checkbox"/>
10. The program addresses all applicable stored energies.	<input type="checkbox"/>	<input type="checkbox"/>
11. Specific lockout/tagout procedures are developed for each piece of machinery and posted on each piece of machinery.	<input type="checkbox"/>	<input type="checkbox"/>
12. Lockout/tagout procedures are included for vehicles and mobile equipment.	<input type="checkbox"/>	<input type="checkbox"/>
13. Front-line supervisory staff observe employee behavior and enforce the lockout/tagout procedures.	<input type="checkbox"/>	<input type="checkbox"/>
14. Audits take place annually or more frequently.	<input type="checkbox"/>	<input type="checkbox"/>
Date	Audit by	

Corrective Actions Needed

Actions and Responsible Persons
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Appendix B: Lockout/Tagout Information Placard

This equipment must be serviced by Authorized Personnel ONLY!

Equipment/Machine:	Name	ID Number
Authorized Personnel:	Name/Phone	
Location of Lockout Device:	Detailed Info	

Electrical Energy Sources:

Primary Electrical Source:	Panel #	Breaker #
Additional Electrical Source:	Panel #	Breaker #
Additional Electrical Source:	Panel #	Breaker #
Additional Electrical Source:	Panel #	Breaker #

Other Hazardous Energy Sources (Active or Stored Energy):

Common Types: Chemical, Hydraulic, Mechanical, Pneumatic, Potential, Other

Type/Description	Location

Notes/Diagram:

DO NOT REMOVE THIS TAG FROM ANY MACHINE!