



Lockout/Tagout Program

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I. POLICY

This policy establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

II. AUTHORITY

California Code of Regulations, Title 8, Section 3314

III. SCOPE

This program applies to employees and supervisors who service or maintain equipment and machines which could either unexpectedly start up, or work in areas where the possibility of the release of stored energy could cause injury to employees. This includes authorized employees who perform repair, servicing and maintenance operation and affected employees who work with the equipment to be locked or tagged out.

IV. DEFINITIONS

- A. **Affected employee-** An employee whose job requires them to operate or use a machine or equipment on which cleaning, repairing, servicing, setting-up or adjusting operations are being performed under lockout or tagout, or whose job requires the employee to work in an area in which such activities are being performed under lockout or tagout.
- B. **Authorized employee or person-** A qualified person who locks out or tags out specific machines or equipment to perform cleaning, repairing, servicing, setting-up, and adjusting operations on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing cleaning, repairing, servicing, setting-up and adjusting operations covered under this section.
- C. **Locked out-** Refers to the use of devices, positive methods, and procedures, which will result in the effective isolation or securing of prime movers, machinery, and equipment from mechanical, hydraulic, pneumatic, chemical, electrical, thermal, or other hazardous energy sources.
- D. **Normal Production Operations-** The utilization of a machine or equipment to perform its intended production function.
- E. **Prime Mover-** The source of mechanical power for a machine.

V. RESPONSIBILITY

RISK MANAGEMENT

- A. Prepare and maintain a written program which complies with the requirements of Cal/OSHA California Code of Regulations, Title 8, Section 3314;
- B. Review and revise the Lockout/Tagout (LOTO) Program:
 - 1. On an annual basis;
 - 2. When changes occur to California Code of Regulations, Title 8, Section 3314 that prompt revision of this document;
 - 3. When operational changes occur that require a revision of this document; and
 - 4. When there is an accident or near miss that relates to this section;
- C. Provide and/or provide training to all potentially impacted employees and their supervisors on the requirements of the program;
- D. Assist departments in identifying hazardous energy sources and choosing of proper lockout/tagout devices;
- E. Perform periodic inspections to ensure compliance with program procedures; and
- F. Maintain training records.

DIRECTORS, MANAGERS, AND SUPERVISORS

- A. Evaluate department activities to determine which activities are covered by the LOTO Program;
- B. Ensure that all new and refurbished equipment is capable of accommodating lockout devices;
- C. Identify “authorized” and “affected” employees of this program within each department;
- D. Ensure that all authorized and affected employees in department receive proper training on the LOTO Program;
- E. Investigate and document all reported accidents and near misses related to LOTO and recommend corrective actions;
- F. Should an incident occur, complete a Report of Employee Injury or Incident form and any additional documentation needed to investigate work related injuries and illnesses; and
- G. Develop, document, and utilize written energy control procedures for each potentially hazardous energy source. Procedures must include designation of the person-in-charge for each division or department/shops.

AUTHORIZED EMPLOYEES

- A. Follow procedures developed for lockout/tagout and ensure compliance with equipment;
- B. Determine the type(s), magnitude, and hazards to be controlled, and the method(s) or means to control the energy before starting the service or maintenance task;
- C. Locate and identify all energy isolation devices that will be locked or tagged out before start of service or maintenance task;
- D. Report any lost lockout/tagout equipment immediately to supervisor;
- E. Notify affected employees before lockout/tagout procedures are performed and when energy is restored upon completion;
- F. Participate in the development of equipment specific energy control procedures and reporting any deficiencies in energy control procedures; and
- G. Attend assigned training sessions.

AFFECTED EMPLOYEES

- A. Understand and follow the provisions of the Lockout/Tagout Program;
- B. Report to supervisors when lockout/tagout procedures are not followed;
- C. Never attempt to operate any machine, process or piece of equipment that is locked or tagged out;

- D. Never attempt to remove any locks or tags from energy isolating devices; and
- E. Attend assigned training sessions.

VI. PROGRAM

CLEANING, SERVICING AND ADJUSTING OPERATIONS

- A. Machinery or equipment capable of movement shall be stopped and the power source de-energized or disengaged, and, if necessary, the moveable parts shall be mechanically blocked or locked out to prevent inadvertent movement, or release of stored energy during cleaning, servicing and adjusting operations. Accident prevention signs or tags or both shall be placed on the controls of the power source of the machinery or equipment.
- B. If the machinery or equipment must be capable of movement during this period in order to perform the specific task, the employer shall minimize the hazard by providing and requiring the use of extension tools (i.e. extended swabs, brushes, scrapers) or other methods or means to protect employees from injury due to such movement. Employees shall be made familiar with the safe use and maintenance of such tools, methods or means, by thorough training.

REPAIR WORK AND SETTING UP OPERATIONS

- A. Prime movers, equipment, or power-driven machines equipped with lockable controls or readily adaptable to lockable controls shall be locked out or positively sealed in the “off” position during repair work and setting-up operations. Machines, equipment, or prime movers not equipped with lockable controls or readily adaptable to lockable controls shall be considered in compliance with California Code of Regulations, Title 8, Section 3314 when positive means are taken, such as de-energizing or disconnecting the equipment from its source of power, or other action which will effectively prevent the equipment, prime mover or machine from inadvertent movement or release of stored energy. In all cases, accident prevention signs or tags or both shall be placed on the controls of the equipment, machines and prime movers during repair work and setting-up operations.

EXCEPTIONS

- A. Minor tool changes and adjustments, and other minor servicing activities, which take place during normal production operations are not covered by the requirements of California Code of Regulations, Title 8, Section 3314 if they are routine, repetitive, and integral to the use of the equipment or machinery for production, provided that the work is performed using alternative measures which provide effective protection.
- B. Work on cord and plug-connected electric equipment for which exposure to the hazards of unexpected energization or startup of the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the **exclusive control** of the employee performing the work.
- C. Hot tap operations involving transmission and distribution systems for substances such as gas, steam, water, or petroleum products when they are performed on pressurized pipelines, provided that the employer demonstrates that 1) continuity of service is essential; 2) shutdown of the system is impractical; and 3) documented procedures are followed, and special equipment is used which will provide proven effective protection for employees.

HAZARDOUS ENERGY SOURCES

A. Hazardous energy sources include the following:

1. Electrical
2. Gravitational
3. Pneumatic
4. Thermal
5. Flywheel or gravity
6. Radiation
7. Mechanical
8. Hydraulic
9. Chemical
10. Spring
11. Stored

HAZARDOUS ENERGY CONTROL PROCEDURES (HECP)

B. Written procedures shall clearly and specifically outline the scope, purpose, authorization, rules, and techniques to be utilized for the control of hazardous energy and the means to enforce compliance. HECPs will be specific to the equipment or machines being operated on. An HECP will include:

1. A statement of the intended use of the procedure;
2. Scope;
3. Name(s) of authorized employee(s) responsible for carrying out the HECP;
4. Notification to affected employees that a lockout is required and the reasons behind it;
5. Rules that apply to HECP;
 - a. Failure to comply with HECP will result in disciplinary action as outlined in the Injury and Illness Prevention Plan.
6. Guidelines for transfer of responsibilities;
 - a. Informing all Affected Employees;
 - b. Confirming that the authorized employee who applied the device(s) is not at the facility;
 - c. Making all reasonable efforts to contact the authorized employee who applied the device(s) and inform them that the device(s) have been removed;
 - d. Naming in advance the new authorized person(s) responsible for the removal of devices(s);
7. Procedural steps for shutdown, isolation, blocking and securing machines or equipment to control hazardous energy:
 - a. Prepare for shutdown;
 - b. Shutdown operating equipment by the normal procedure (e.g. depressing a button, opening a toggle switch);
 - c. Apply the lockout or tagout device;
 - d. Hazardous energy control such as: closing valves, bleeding or draining valves, blocking, etc.;
 - e. Requirements for testing a machine or equipment, to determine and verify the effectiveness of lockout devices, tagout devices and other hazardous energy control devices;

8. Procedural steps for re-energizing equipment after servicing is complete:
 - a. Inspect the work area to ensure all items have been removed and that the equipment is intact and capable of operating properly;
 - b. Notify affected employees immediately after removing locks or tags and before starting equipment or machines; and
 - c. Make sure tags or locks are removed only by those employees who attached them.
- C. The procedural steps for the safe lockout/tagout of prime movers, machinery or equipment may be used for a group or type of machinery or equipment when either of the following two conditions exist:
 1. Condition 1:
 - a. The operational controls named in the procedural steps are configured in a similar manner, and
 - b. The locations of disconnect points (energy isolating devices) are identified, and
 - c. The sequence of steps to safely lockout or tagout the machinery or equipment are similar.
 2. Condition 2:
 - a. The machinery or equipment has a single energy supply that is readily identified and isolated and has no stored or residual hazardous energy.

GROUP LOCKOUT OR TAGOUT

- A. When servicing and/or maintenance is performed by a crew, craft, department, or other group, they shall utilize a procedure which affords the employees a level of protection equivalent to that provided by the utilization of a personal lockout or tagout device.
- B. Group lockout or tagout devices shall be used in accordance with the procedures required by section HECF and in accordance with requirements that include, but are not necessarily limited to, the following:
 1. Primary responsibility shall be vested in an authorized employee for a set number of employees working under the protection of a group lockout or tagout device (such as an operations lock);
 2. Provision shall be made for the authorized employee to ascertain the exposure status of individual group members regarding the lockout or tagout of the machine or equipment;
 3. When more than one crew, craft, department, etc. is involved, assignment of overall job-associated lockout or tagout control responsibility shall be given to an authorized employee designated to coordinate affected work forces and ensure continuity of protection; and
 4. Each authorized employee shall affix a personal lockout or tagout device to the group lockout device, group lockbox, or comparable mechanism when he or she begins work and shall remove those devices when he or she stops working on the machine or equipment being serviced or maintained.

SHIFT OR PERSONNEL CHANGE

- A. Specific hazardous energy control procedures (i.e., lockout/tagout) shall be utilized during shift or personnel changes to ensure the continuity of lockout or tagout protection, including, but not necessarily limited to, provision for the orderly transfer of lockout or tagout device protection between off-going and oncoming employees, to minimize exposure to hazards from the unexpected energization or start-up of the machine or equipment, or the release of stored energy.

LOCKOUT/TAGOUT DEVICES

- A. In every instance, a lockout device is preferable to a tag because tags do not present a physical restraint to the startup of equipment. Tags are warning devices which can be easily removed, bypassed, obscured or ignored. When a tag is used, further steps must be taken to ensure the safety of others.
- B. The following are requirements for lockout/tagout devices:
 - 1. Departments are responsible for providing employees with enough devices for control of hazardous energy. Employees in each affected department will be issued personal locks to be used for lockout/tagout. Personal locks will also be color coded per team within a department to determine the source of the lock out easily and quickly.
 - 2. 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.
 - 3. Identification of owner and contact information shall be clearly visible on lockout and tagout devices. Tagout devices shall clearly state the reason for the interruption of equipment usage.
 - 4. Lockout/tagout devices must be only used for controlling energy and shall not be used for other purposes.
 - 5. Lockout/Tagout devices must be capable of withstanding the environment for the time they will be applied. Tagout devices must be constructed and printed so that the exposure to weather, wet conditions, or corrosive environments will not alter the tag or make it illegible.
 - 6. Lockout/Tagout devices must be standardized within the City.
 - 7. Lockout devices must be sturdy enough to prevent removal without the use of excessive force.
 - 8. Tagout devices must be sturdy enough to prevent inadvertent or accidental removal.
 - 9. Devices must indicate the identity of the employee applying the device.
 - 10. Tagout devices shall warn against hazardous conditions if the machine or equipment is energized and shall include warnings such as "Do Not Open, Do Not Close, and Do Not Operate."
- C. Warning labels will be fixed on equipment, machines and processes that require LOTO.

INSPECTION PROCEDURES

To ensure compliance with this program, the department must conduct an annual inspection of the procedures.

- A. The inspection must be conducted by an authorized employee other than the one using the control procedures, and a copy must be sent to Risk Management upon completion.
- B. The inspection must be designed to correct any deficiencies that are found.
- C. The inspection shall include a review of procedures with the authorized employees.
- D. The inspection must be documented with the name of the machine or equipment for which the procedures are utilized, the date, the employees included and the person conducting the inspection.
- E. Records must be kept for five years.

EMPLOYEE TRAINING

- A. Authorized employees must receive training in the recognition of hazardous energy sources and the methods used for isolation of these sources.
- B. Affected employees shall be instructed in the purpose and use of the energy control procedure during awareness training.
- C. All other employees who work in the area must be made aware of the control procedures and about the prohibition on restarting equipment that has been locked or tagged out.
- D. Retraining shall be provided:
 - 1. Whenever there is a change in job assignment;
 - 2. A change in machines, equipment, or processes;
 - 3. When there is a change in the energy control procedures; and
 - 4. On a two-year basis.

CONTRACTORS

- A. Contractors who perform work on City property must adhere to the City's LOTO procedures. It is the responsibility of the Project Manager to ensure these procedures are carried out.
- B. Contractors must also make a copy of their LOTO Program available to Risk Management for review.
- C. Contractors are expected to always enforce these guidelines while performing work for the City.
- D. If there is a conflict in procedures between Contractor and City programs, notification will be sent to Risk Management for support.
- E. Contractors with an insufficient program will not be allowed to begin work until their program meets or exceeds the requirements of this program.

VII. RECORDKEEPING

All training records, inspections, and HCEPs prepared in association with the Lockout/Tagout Program will be maintained by the Office of Human Resources/Risk Management.

VIII. ADDITIONAL REFERENCES

<https://www.dir.ca.gov/Title8/3314.html>

Requirements for working on energized electrical systems are prescribed in California Code of Regulations, Title 8, Chapter 4, Subchapter 5 (Electrical Safety Orders), Sections 2320.1-2320.9 and 2940-2945.

Evaluation conducted by:

Signature

Print name and title

Date

Directions for completing the evaluation table:

Machinery/Equipment – List all machinery and equipment, including identifying information such as manufacturer, make, model, location, etc., on which employees conduct regulated work operations. Remember to include any vehicles and heavy equipment on which employees may conduct such work.

Authorized and affected employees – Enter the job titles of the authorized employees who implement the hazardous energy control procedures and conduct the regulated work activities. Also, indicate the titles of the affected employees who operate or use the machines or equipment on which hazardous energy control procedures may be conducted. Affected employees also include people who work in areas where hazardous energy control procedures are conducted.

Regulated work operations – Enter the regulated work activities, specifically cleaning, servicing, adjusting, unjamming, repairing, and setting-up operations conducted on the machinery or equipment by the company’s employees or outside servicing personnel.

Hazardous energies – Indicate the types of hazardous energies associated with the machine or equipment:

Kinetic – Motion (fans, blades, presses); Electrical (generators, capacitors); Thermal (ovens, steam); Radiant (lasers, electromagnetic fields, microwaves, x-rays, ultraviolet, infrared)

Potential – Gravitational (commercial doors, dock plates, latches, swing platforms, heavy machine parts); Stored Mechanical (compressed springs, stretched rubber); Hydraulic (pressurized liquid) and Pneumatic (pressurized air) found in pipes, heated chemical drums, vats, and other containers

Hazardous functions or parts – Enter the functions or parts of machinery or equipment of which the unexpected movement would cause injury to the employee. Typical parts of machinery that can cause entanglement, cutting, puncturing, crushing, burning, struck by, or other injuries include fans, knives, booms, arms, and other moving parts of machinery or equipment. Hazardous parts also include pipes, valves, chemicals, and capacitors. Due to gravitational energy, the machine or equipment must be considered a potential hazard. In addition, the product or waste created by the machine when the machine is operating must be evaluated.

Disconnecting means, including location – Enter the device, group of devices, or other means by which the conductors of a circuit can be disconnected from their source of the machine’s or equipment’s power supply. Typical disconnecting means include disconnect switches and lockable circuit breakers. Also enter the location of the disconnecting means so it can be quickly identified by the authorized employee.

Equipment-Specific
Hazardous Energy Control Evaluation and Certification

Date of evaluation: _____

Machine/equipment information: _____

Machine/equipment location: _____

What are the hazardous energy control (lockout/tagout) activities associated with this machine?

- cleaning servicing adjusting unjamming
 repair work setting up

What are all the hazardous energy sources and associated hazardous movements (be specific)?

[Complete the following table. Hazardous energy sources: electrical, thermal, radiant, motion, hydraulic, pneumatic, chemical, stored mechanical (i.e., springs), gravitational, steam, etc.]

Hazardous energy source	Potential hazardous motion (include machine or equipment part/function and location)	Do the procedural steps need to be written or updated?

What are the disconnecting means and energy-isolating devices required? **[Complete the following table. An energy-isolating device is a mechanical device that physically prevents the transmission or release of energy (i.e., electrical circuit breaker, disconnect switch, etc. Note: push buttons, selector switches, and other control circuit-type devices are NOT energy-isolating devices.)]**

Disconnecting means	Location	Devices and hardware required	Do the procedural steps need to be written or updated?

What steps are required for shutting down and disconnecting the machine? **[Complete the following table. Exposure hazards to employees include electrocution, electric shock, crushes, cuts, amputation, struck by, etc.]**

Steps for shutting down the energy source	Exposure hazards if step(s) are not followed	Are employees following safety procedure(s)?	Do the procedural steps need to be written or updated?

What are the steps for dissipating or restraining stored energy? **[Complete the following table.]**

Steps for dissipating or restraining stored energy	Exposure hazards if step(s) are not followed	Are employees following safety procedure(s)?	Do the procedural steps need to be written or updated?

What are the steps for locking, tagging, blanking, blinding, or other method for controlling energy sources? **[Complete the following table.]**

Steps for locking, tagging, blanking, blinding, or other method for controlling energy sources	Exposure hazards if step(s) are not followed	Are employees following safety procedure(s)?	Do the procedural steps need to be written or updated?

What are the steps for verifying that the methods of energy isolation and control are effective?

[Complete the following table.]

Steps for verifying energy isolation and control	Exposure hazards if step(s) are not followed	Are employees following safety procedure(s)?	Do the procedural steps need to be written or updated?

What are the steps for starting this machinery during lockout activities for evaluation and testing?

[Complete the following table. Steps must include clearing all personnel, tools, and materials, removing lockout devices, restoring the equipment to safe lockout conditions.]

Steps for testing and evaluating machinery during lockout/tagout activities	Exposure hazards if step(s) are not followed	Are employees following safety procedure(s)?	Do the procedural steps need to be written or updated?

What are the steps for starting up this machinery after energy control work activity is completed to return it to normal production operations?

[Complete the following table. Must include notifying all affected and authorized employees before re-starting the machine.]

Steps for starting-up machinery after work is completed	Exposure hazards if step(s) are not followed	Are employees following safety procedure(s)?	Do the procedural steps need to be written or updated?

Are alternative measures that provide effective protection for employees during lockout work activities permitted on this machine? (Refer to California Code of Regulations, title 8, section 3314(c), (d), and (f) for activities and conditions that permit alternative measures.)

Yes. List the applicable exception: _____

No

If alternative measures are permitted, what are the protective steps, devices, and equipment needed to provide effective protections to employees? **[Complete the following table.]**

Alternative protective steps, devices, and equipment	Exposure hazards	Are employees following safety procedure(s)?	Do the procedural steps need to be written or updated?

Identify the participants associated with this evaluation. **[Complete the following table.]**

Energy control procedure participants	Job titles / Names
Authorized employees	
Affected employees	

Do employees need to be trained or retrained in the procedure?

Yes. What must be included in the training? _____

Procedure evaluation certification:

Certified by: _____ Date: _____

Safety Permit for
Hazardous Energy Control (Lockout/Tagout)
Work Operations

Date of work activity: _____

Permit issued to

Authorized

employee name: _____ **Title:** _____

Company name

(if outside contractor): _____ **Contact number:** _____

Date/Time issued: _____ **Date/Time permit expires:** _____

Work activity: _____

Machine/equipment description: _____

Work location: _____

Personal protective equipment (PPE), as required: (*also circle specific types within the parentheses*)

- | | | |
|---|---|---|
| <input type="checkbox"/> Face shield | <input type="checkbox"/> Ear plugs | <input type="checkbox"/> Hard hat |
| <input type="checkbox"/> Safety glasses | <input type="checkbox"/> Ear muffs | <input type="checkbox"/> Hood (chemical, thermal) |
| <input type="checkbox"/> Safety goggles | <input type="checkbox"/> Suit (rubber, thermal, Tyvek) | <input type="checkbox"/> Safety harness & line |
| <input type="checkbox"/> Filtering facepiece/N95 | <input type="checkbox"/> Respirator (dust, vapor, combination, full-face, half-face) | |
| <input type="checkbox"/> Gloves (thermal) | <input type="checkbox"/> Gloves (latex, neoprene, nitrile, PVC, rubber) | |
| <input type="checkbox"/> Rubber boots | <input type="checkbox"/> Shoes (steel-toed, electrical safety, slip-resistant) | |

Additional PPE required:

Energy control devices, as required: *(also circle applicable activities within the parentheses)*

- | | | | | |
|--|--------------------------|---|--------------------------|---|
| <input type="checkbox"/> Disconnect | <input type="checkbox"/> | <input type="checkbox"/> Blocks | <input type="checkbox"/> | <input type="checkbox"/> Prevention Tag |
| <input type="checkbox"/> Valves (close, block, blind) | <input type="checkbox"/> | <input type="checkbox"/> Lock devices (individual, group) | <input type="checkbox"/> | <input type="checkbox"/> Grounding |
| <input type="checkbox"/> Lines (bleeding, blanking/blinding) | <input type="checkbox"/> | | | |
| <input type="checkbox"/> Other: _____ | | | | |

Other safety considerations, as required: *(also circle applicable items within the parentheses)*

- | | | |
|--|--------------------------|--|
| <input type="checkbox"/> Confined space (requires additional permit) | <input type="checkbox"/> | <input type="checkbox"/> Fire hazards (fire extinguisher, area free of combustibles) |
| <input type="checkbox"/> Restrict area (barricade, safety tape) | <input type="checkbox"/> | <input type="checkbox"/> Welding (sparks, shield arcs) |
| <input type="checkbox"/> Safe access (ladder, aerial device, scissor lift) | <input type="checkbox"/> | <input type="checkbox"/> Other: _____ |

Approval

Signature _____

Print name/title (i.e., Safety Manager, Supervisor) _____
Date _____

Job complete

Job incomplete

Notes:

The authorized worker holds this permit during the work activity and returns it to the approver after work is completed.