

UC Shop Safety Manual – Section 7

Lockout / Tagout (Control of Hazardous Energy)

University of California – Office of the President

Section Overview

Section 7 of the **UC Shop Safety Manual** establishes University-wide requirements for the control of hazardous energy (Lockout/Tagout). This section defines minimum safety standards, procedural expectations, and regulatory alignment applicable to all University of California locations.

Regulatory Basis

This section is based on:

- **Cal/OSHA Title 8, Section 3314 – Control of Hazardous Energy**
 - Applicable consensus standards referenced by UCOP
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Applicability

This section applies to all University of California personnel and contractors performing servicing, maintenance, repair, cleaning, inspection, or other work where the unexpected energization, startup, or release of stored energy could cause injury.

Campus Implementation

Each UC campus implements Section 7 through local procedures, roles, and responsibilities. For UC Santa Barbara–specific implementation guidance, refer to the **UCSB Addendum to UC Shop Safety Manual – Section 7 (Lockout/Tagout)**.

This cover page is provided for navigation and context only. The requirements of Section 7 remain authoritative as issued by the University of California Office of the President.

SECTION 7

Lockout/Tagout

SECTION 7: LOCKOUT/TAGOUT

This section contains information about Lockout/Tagout (LOTO) in compliance with Cal/OSHA Title 8 Section 3314. LOTO is a process used to shut down machinery and equipment for repairs, service, maintenance, and other operations.

What is Lockout/Tagout?

Lockout/Tagout (LOTO) establishes a means of positive control to prevent the accidental starting or activating of machinery or systems while they are being repaired, cleaned and/or serviced. By physically locking out and tagging out each energy source associated with a machine, accidents can be prevented.

What is the UC LOTO Program?

The UC Lockout/Tagout (LOTO) Program provides an overview of LOTO for campus (and off-campus) operations, and details UC procedures for using LOTO as follows:

1. Establish a safe and positive means of shutting down machinery, equipment and systems.
2. Prohibit unauthorized personnel or remote control systems from starting machinery or equipment while it is being serviced.
3. Provide a secondary control system (tagout) in addition to, and/or when it is impossible to, positively lockout the machinery or equipment by traditional means.
4. Establish responsibility for implementing and controlling lockout/tagout (LOTO) procedures.
5. Ensure that only approved locks, standardized tags and fastening devices will be utilized in the LOTO procedures.
6. Develop risk assessment procedures to implement alternative methods when traditional LOTO cannot be utilized.

Lockout is a physical process that stops the energy of a piece of equipment at its source, creating a “Zero Energy State”. A typical scenario is that a power switch, circuit breaker, or valve is turned off, and a locking device is attached to prevent the power from being turned back on.

Tagout is a written warning on a tag that describes the tag out procedure. The tag displays the name of the service person and the duration of time that the machine will be locked and tagged out.

Locks and tags must have a similar format and be readily recognizable by shop users. They must be easy to read and durable enough to withstand 50 pounds of pulling force.

Who Can Perform LOTO Procedures?

Only employees who have attended the LOTO training and have received authorization from EH&S can create and carry out LOTO procedures. Training covers how to identify and shut down all live parts of machines and ensure effectiveness of lockout devices and procedures. Trained workers are provided with locks and tags that must be used to clearly indicate who has locked and tagged the machine. Under normal operating procedures, the only person(s) allowed to undo a LOTO procedure is the person(s) that implemented it.

Which Types of Machines Require LOTO?

All machines that are powered by electrical, mechanical, chemical, or other type of energy or have the potential to store or re-accumulate energy may require LOTO.

When Should LOTO Procedures Be Used?

Any machine that is being serviced, repaired or maintained may be required to be locked and tagged out. This includes lubricating, cleaning, un-jamming, removing guards, and/or when the body comes close to machinery parts.

What Steps Must Be Taken When Implementing LOTO?

1. Notify all affected employees before beginning LOTO and verify that they are a safe distance from the machine. Identify any potential hazards and the primary and any secondary energy sources used in the machine.
2. Shut down and terminate the flow of energy into the machine at the local and main power source. There may be more than one local source.
3. Isolate the energy sources and prevent unexpected movement. Bleeding, blocking, venting, etc. may also be needed.
4. Connect the designated lock or tag to the energy control(s). Each user must have their own lock, tag, and key. Place the locks and/or tags so that they are clearly visible.
5. Test the machine to ensure that no energy is flowing. Turn “on” the local switch control(s) to make sure that zero energy is reached. Be sure to turn them “off” before moving to the next step.
6. Perform maintenance, service, or repair.
7. When service or maintenance is complete, remove all tools and keep the energy switches in the “off” position.
8. Remove the lock and/or tag. The individual(s) who placed the lock or tag is the only person(s) authorized to remove it.
9. Make sure affected employees are a safe distance from the machine. Turn on the energy in the reverse order that the energy sources were taken off-line and test the machine for proper operation. Notify other workers that the machine is operational again.

Employees and contractors must follow LOTO procedures ([Appendix J](#)) and must not take short cuts. EH&S requires an initial LOTO training for all shop supervisors who perform servicing or maintenance. A LOTO audit will typically be part of the annual Shop Safety Inspection in order to maintain or correct the LOTO procedures and help keep workers safe.

Refer to your campus-specific Lockout/Tagout Program for specific policies. Contact EH&S for help in developing or completing LOTO procedures and training employees.

UCSB Addendum to UC Shop Safety Manual – Section 7

Lockout/Tagout (LOTO)

Purpose and Applicability

This Addendum supplements **Section 7 (Lockout/Tagout)** of the UC Shop Safety Manual by defining campus-specific implementation expectations for the University of California, Santa Barbara (UCSB). It does not replace or restate UCOP requirements or Cal/OSHA Title 8 §3314. Rather, it clarifies how Lockout/Tagout (LOTO) is administered at UCSB, including roles, responsibilities for Dept. Managers, supervisors, and ladder users.

This Addendum applies to all UCSB departments, units, and contractors that service, maintain, repair, clean, inspect, or otherwise work on equipment or systems with potentially hazardous energy.

Relationship to UCOP Section 7

This Addendum must be read in conjunction with **UC Shop Safety Manual – Section 7**. In the event of a conflict, the most protective requirement applies. EH&S should be contacted for assistance.

For detailed procedural requirements, refer to UCOP Section 7 and equipment-specific LOTO procedures established by the owner department.

Program Structure

UCSB implements LOTO through an owner-department implementation model.

- **Owner Departments** are responsible for identifying equipment requiring LOTO, developing and maintaining equipment-specific LOTO procedures when required, authorizing employees, and ensuring compliance.

- **Environmental Health & Safety (EH&S)** establishes campus-wide standards, provides training resources, technical consultation, and supports oversight activities.

Departments must implement LOTO in accordance with:

- UC Shop Safety Manual – Section 7
- Cal/OSHA Title 8 §3314
- Applicable UCSB guidance and this Addendum

EH&S provides consultation and support but does not authorize or approve departmental operational decisions.

Equipment-Specific LOTO Procedures

Owner Departments must ensure that **equipment-specific LOTO procedures** are developed, documented, and maintained when required by regulation or hazard evaluation.

Where written procedures are required, they must:

- Identify all primary and secondary energy sources
- Specify methods of energy isolation and control
- Address stored or residual energy
- Define verification steps to achieve a zero-energy state
- Be reviewed and updated when equipment or processes change

Generic or assumed procedures are not acceptable where equipment complexity or hazardous energy exposure requires written instructions.

Training and Authorization

Only authorized employees may apply LOTO.

Authorization is granted by the **owner department** based on completion of required LOTO training and demonstrated competency.

At UCSB:

- LOTO training and qualification are provided by qualified training providers with industry experience and regulatory-acceptable training credentials and coursework.
- Departments and Responsible Persons (RPs) do not self-train, self-certify, or independently establish LOTO training criteria
- EH&S establishes minimum training content, authorization guidance, and refresher requirements

Refresher training is required when procedures change, deficiencies are observed, or incidents occur.

LOTO Documentation

Departments must document the application and verification of LOTO when servicing, maintenance, repair, cleaning, or inspection activities require hazardous energy control.

LOTO documentation is intended to:

- Record task- or equipment-level application of LOTO

- Demonstrate verification of a zero-energy state
- Support supervisory oversight and inspection readiness

Completion of LOTO documentation does not constitute training, qualification, or authorization.

Photographs of locks or tags alone are not sufficient to demonstrate compliance with Cal/OSHA requirements.

Acceptable Documentation and Forms

Departments may use a simple LOTO documentation record or equivalent documentation appropriate to the complexity and risk of the equipment involved. Documentation should, at a minimum, identify:

- Equipment or system
- Energy source(s) controlled
- Authorized employee(s)
- Date and time of application and removal
- Verification of a zero-energy state

More detailed documentation may be appropriate for complex or high-energy systems.

No single form is required, provided documentation demonstrates that LOTO was applied, verified, and managed by authorized personnel.

Sample documentation resources are provided as optional tools (see “Quick Links”).

Alternative Methods and Energized (“Live”) Work

When traditional lockout/tagout cannot be applied, departments must evaluate whether alternative methods are permissible under Cal/OSHA.

Energized or “live” work is permitted only when all regulatory criteria are met, including:

- Continuity of service is essential
- Shutdown is impractical
- Documented procedures and safeguards provide effective protection

Departments must coordinate with EH&S for technical review and assistance. EH&S provides consultation but does not authorize operational decisions.

Contractor Coordination

Departments must ensure contractor LOTO activities are coordinated prior to work beginning. Contractors must:

- Comply with applicable Cal/OSHA and UCOP LOTO requirements
- Use their employer's LOTO program unless otherwise specified by contract
- Resolve procedural conflicts with the owner department and EH&S before work begins

Oversight, Audits, and Records

Departments must maintain records of:

- Equipment-specific LOTO procedures (where required)
- Training and authorization
- LOTO documentation and inspections, as applicable

LOTO compliance may be evaluated through shop safety inspections, audits, or incident investigations. EH&S supports departments in identifying gaps and corrective actions.

Explanation:

To meet Title 8, UCSB adopts UCOP Shop Safety Manual Section 7 as the governing hazardous energy standard. The UCSB Lockout/Tagout webpage defines departmental roles and responsibilities, while departments implement equipment-specific procedures and training in accordance with the UCSB Addendum and EH&S guidance.