

UC Davis Policy and Procedure Manual

Chapter 290, Health and Safety Services

Section 84, Lockout Tagout

Date: 10/17/16

Supersedes: New

Responsible Department: Environmental Health and Safety

Source Document: California Code of Regulations, Title 8.

I. Purpose

- A. This section establishes policy and procedures for controlling hazardous energy during maintenance and servicing to ensure employees performing construction, installation, startup, service, repair or any other maintenance of energized equipment are not injured due to the unexpected movement or release of energy.
- B. This section supplements Cal/OSHA regulations contained in the California Code of Regulations, Title 8 Control of Energy Sources, section 3314 and some low voltage electrical safety orders in section 2320.

II. Definitions

- A. Affected Employee—a person who works near or on equipment on which cleaning, repairing, servicing, setting-up or adjusting operations are or may be performed under the Lockout Tagout Program.
- B. Authorized Employee--has completed the hazardous energy control training and is certified as an Authorized Lockout-Tagout (LOTO) employee to lockout and/or tagout specific machines or equipment in order to perform cleaning, repairing, servicing, setting-up, and adjusting operations on that machine or equipment.
- C. Energy Isolating Device--a mechanical device located at an energy control point positively blocking the flow of energy and locked in the "safe" position. Push buttons, selector switches, software controls, interlocks, and other control circuit devices are not considered energy isolating devices.
- D. Lockout--method of applying a mechanical lockout device and a tag on an energy-isolating device by an authorized employee in accordance with established written procedures, in order to control hazardous energies.
- E. Lockout Device--padlocks, combination locks, or other methods (such as disconnecting conductors or removing fuses), which will effectively prevent unexpected or inadvertent energizing of a designated circuit or release of equipment or machinery. It is not be used for other purposes, and includes a means to indicate the identity of the employee applying the device.
- F. Stored Energy Source--any device capable of holding energy after equipment shutdown such as; capacitors, tanks, pipes, springs, suspended weights, and flywheel.
- G. Tagout—the placement of a tagout device on an energy-isolating device in accordance with established written procedures to control hazardous energy.

II. Policy

- A. This policy is applicable to all forms of existing and potentially hazardous energy (mechanical springs in tension or compression, compressed gas cylinder, counter weights, etc.), kinetic energy (rotating flywheel, fans, moving parts, rolling components, etc.), pneumatic, hydraulic, thermal, chemical and utility energy (electricity, compressed air, steam, domestic water, etc.) which may be part of a particular machine or utility system and must be isolated through lockout.

- B. Individuals working on equipment must be in accordance with the assigned roles and responsibilities and also follow all procedures, with some exclusions, as detailed below.
- C. Certain tasks are excluded, such as minor tool changes and adjustments part of normal production operations and accomplished without removing protective guards or with the use of tools if the employee is not potentially exposed to hazardous energy or inadvertent startup of the equipment.
- D. Work can performed on electrical equipment or systems where there are exposed, energized electrical parts or where there may be a potential for electric shock or electric burns.
 - 1. This type of work is done only after responsible supervision has determined the work must be performed with the equipment energized.
 - 2. Only Authorized Lockout/Tagout Employees can perform energized electrical work while wearing appropriate protective equipment using approved work techniques.
- E. All affected employees must be notified as necessary when a lockout is to be performed and to not disturb the lockout device or attempt to re-start the equipment until they are informed that the lockout has been cleared and it is safe to resume normal operations.

III. Roles and Responsibilities

- A. Departments, especially maintenance shops, have the following responsibilities:
 - 1. Implement this policy as a part of the department's comprehensive health and safety programs and in accordance with [Section 290-15](#).
 - 2. Establish a written departmental LOTO program for safe installation, set-up, adjustment and maintenance work on equipment by isolating energy sources prior to commencing work.
 - 3. Ensure all new or existing powered equipment is equipped with lockable controls, all energy sources are determined and the corresponding disconnecting means appropriately marked indicating its function.
- B. Supervisors and Principal Investigators have the following responsibilities:
 - 1. Provide employees with LOTO equipment for isolating energy from cleaning, servicing, adjusting, repair work, setting-up or other operations.
 - 2. In conjunction with the Authorized Lockout/Tagout employees, create a safe work plan, written lockout procedures, and physically locate and identify all isolating devices establishing which switches, valves, or other energy isolating devices to apply to the equipment being locked out.
 - a. Develop written LOTO standard operating procedures (SOP's) for each piece of equipment requiring lockout.
 - b. Establish an inventory and annually review the LOTO SOP's for effectiveness.
 - 3. Ensure affected and authorized employees receive appropriate LOTO training initially and minimally a refresher class every 3 years.
 - 4. Ensure installation or repair work of department-owned equipment is performed by an authorized employee trained per LOTO SOP's.
- C. A LOTO Coordinator is assigned by the department to manage and ensure compliance per the policy and procedures for the department's LOTO program.
- D. Employees have the following responsibilities:

1. Perform maintenance and installation work only if authorized using lockout materials and SOP methods appropriate for the equipment and type of energy.
 2. Authorized employees must attend initial and refresher required LOTO training.
 3. Authorized employees must be certain which switch or other energy isolating devices apply to the equipment to be locked out.
 4. Affected employees must not disturb the lockout device or attempt to re-start the equipment until they are informed that the lockout has been cleared and it is safe to resume normal operations.
- E. Students are not permitted to perform maintenance installation work unless specifically authorized by a faculty or staff member.
- F. Environmental Health & Safety (EH&S) has the following responsibilities:
1. Provide assistance to departments in lockout/tagout program development.
 2. Provide technical consultation and guidance for operations requiring electrical or machinery lockout/tagout.
 3. Set up campus criteria for standardization of locks and tags. The campus standard is as follows:
 - a. The lock must have a red Danger label on the front of the lock, with the written warning, "This lock is to be removed only by the person shown on the back." The back must state "locked out by" and have space to write a person's name.
 - b. The tag must be a red Danger label on the front of the equipment, with the written warning, "Do Not Operate: This tag and lock are to be removed only by the person shown on the back." The back must state "Equipment locked out by" and have space to write a person's name.

IV. Further Information

For additional information contact [Environmental Health and Safety](#), 530-752-2599.

V. References

- A. [California Code of Regulations, Title 8, §3314. The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting-Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, Including Lockout/Tagout.](#)
- B. [California Code of Regulations, Title 8, §2320. Electrical Safety Orders, Group 1. Low-Voltage Electrical Safety Orders Article 3. Work Procedures.](#)
- C. [NFPA 70E: Standard for Electrical Safety in the Workplace® Current Edition: 2015.](#)
- D. UC Davis Policy and Procedure Manual:
 1. [Section 290-15, Safety Management Program.](#)
 2. [Section 290-85, Electrical Safety.](#)
 3. [Section 290-86, Hazardous Operations.](#)