



LOCKOUT / BLOCKOUT (CONTROL OF HAZARDOUS ENERGY)

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1.0 **PURPOSE**

The purpose of USC's lockout/blockout program is to protect University staff from injury due to the unexpected start-up of machinery and equipment during servicing or maintenance.

2.0 **APPLICABILITY AND SCOPE**

Machine maintenance and cleaning operations take place in University shops and instructional areas. Supervisors or instructors must ensure that those who work on or near such equipment receive instruction in the purpose and practice of lockout procedures.

3.0 **DEFINITIONS**

Affected Employee - 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.

Authorized Employee - A qualified person who locks out specific machines or equipment in order to perform cleaning, repairing, servicing, setting-up, and adjusting operations on that machine or equipment.

Blockout - The practice of blocking the machine's movable parts, if any, with safety devices to prevent them from moving accidentally due to gravity or residual energy in the machine.

Lockout - The practice of using locks to prevent the unwanted activation of mechanical or electrical equipment.

Tagout - The practice of using tags **in conjunction with locks** to increase visibility and awareness that equipment is not to be energized or activated until such devices are removed.

4.0 APPLICABLE REGULATIONS AND STANDARDS

California: Title 8, Section 3314 - The Control of Hazardous Energy.
Title 8, Section 6004 - Accident Prevention Tags.
Title 8, Section 2320.4 - De-energized Equipment or Systems.
Title 8, Section 2320.5 - Energized (or Re-energized) Equipment or Systems.
Title 8, Section 2320.6 - Accident Prevention Tags.
Title 8, Section 2530.43 - Automatic Restarting.
Title 8, Section 2530.86 - Motor Not in Sight from Controller.

5.0 RESPONSIBILITIES

Environmental Health and Safety will oversee the administration of this program, but ultimate responsibility for its implementation rests with each department on campus.

5.1 Employee

Authorized users must receive training regarding the contents of this program and safe use of the specific equipment they will be working with. It is the responsibility of each authorized user to observe safe working practices while performing lockout activities.

5.2 Department / Instructor/ Supervisor Responsibilities

It is the responsibility of each supervisor affected by this program to:

- Ensure that authorized and affected staff is adequately trained;
- Ensure that staff charged with equipment maintenance is issued a suitable lock (or locks) and identification tags;
- Ensure that adequate lockout and blockout equipment (e.g. hasps, blocks, etc.) are available for employee use;
- Ensure that contractors have their own documented procedures for lockout;
- Monitor the implementation of lockout procedures for their staff who perform lockout activities.

5.3 Environmental Health and Safety Responsibilities

It is the responsibility of the Environmental Health and Safety Department to:

- Provide technical assistance and training;
- Conduct a periodic inspection of the energy control procedures at least annually to evaluate their continued effectiveness and determine necessity for updating written procedures.

6.0 PREPARATION FOR LOCKOUT

Employees authorized to perform lockout shall be certain as to which switch, valve, or other energy isolating devices apply to the equipment being locked out. More than one energy source (e.g. electrical, mechanical, hydraulic, pneumatic, or others) may be involved. Any questionable identification of sources shall be cleared by the employees with their supervisors prior to commencing work.

7.0 SEQUENCE OF LOCKOUT PROCEDURE

Observe the following sequence of events during lockout operations:

- Notify all employees working on or around the equipment that lockout is required and that the machine must not be activated;
- If the equipment is operating, shut it down by the normal stopping procedure (such as: depress stop button, open toggle switch, etc.);
- Operate the switch, valve, or other energy isolating devices so that the energy source(s) is disconnected or isolated from the equipment. Stored energy, such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam or water pressure, must also be dissipated or restrained by methods such as grounding, repositioning, blocking, or bleeding down;
- Lockout energy isolating devices with an assigned individual lock;
- Verify that no personnel are exposed and that the energy sources are disconnected;
- Operate the push button or other normal operating controls to make certain the equipment will not operate (CAUTION: Return operating controls to neutral position after the test).

8.0 RESTORING EQUIPMENT TO SERVICE

After the work is completed and the equipment is ready to be returned to normal operation:

- Remove all non-essential items (e.g. tools, work supplies);
- See that all equipment components have been re-installed, including guards and safety devices;
- Repair or replace defective guards before removing lockouts;
- Remove each lockout device using the correct removal sequence;
- Make a visual check before restoring energy, and ensure that everyone is physically clear of the equipment.

9.0 PROCEDURES INVOLVING MORE THAN ONE PERSON

If more than one individual is required to lock out equipment, each shall place his/her own personal lock on energy isolating device(s). The supervisor, or an individual of a work crew designated by a supervisor, with knowledge of the crew, may lock out equipment for the whole crew. In such cases, it may be the responsibility of the individual to carry out all steps of the lockout procedure and inform the crew when it is safe to work on the equipment. Additionally, the designated individual shall not remove a “crew lock” until it has been verified that all individuals are clear.

10.0 PROCEDURES CARRYING OVER TO ANOTHER SHIFT

In the event that equipment must remain locked as work is transferred to another shift, the incoming crew members will place their individual locks on the equipment prior to the outgoing staff removing

their locks. If a crew lock is being used (see previous section), the incoming supervisor or designated person shall be clearly identified to the crew.

11.0 TRAINING

Authorized employees shall be trained on hazardous energy control procedures and on the hazards related to performing activities required for cleaning, repairing, servicing, setting-up and adjusting machinery and equipment.

Affected employees shall be instructed in the purpose and use of the energy control procedure.

12.0 PROGRAM APPROVAL AND REVIEW

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