

CALIFORNIA STATE UNIVERSITY FRESNO

LOCKOUT BLOCKOUT PROGRAM



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California State University Fresno

Lockout Blockout Program

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Appendix A – Emergency Lock Removal Form

Attachments:

Lockout Blockout SOP template
CFR Title 29 Section 1910.147
CCR Title 8 Section 2320.1-2320.9
CCR Title 8 Section 3314

Lockout / Blockout Program

1.0 REGULATORY AUTHORITY

Code of Federal Regulations, 29 CFR 1910.147; California Code of Regulations, Title 8, Sections 2320.1-2320.9 & 3314; California State University, Fresno Injury and Illness Prevention Program.

2.0 POLICY

It is the policy of California State University, Fresno to maintain, insofar as is reasonably possible, a campus environment for faculty, staff, students and the public that will not adversely affect their health and safety nor subject them to avoidable risks of accidental injury or illness. Furthermore, the University has an obligation to safeguard employees from hazardous energy while they are performing service or maintenance on machines and equipment.

3.0 PURPOSE

Hazardous energy appears in the workplace in the form of electrical, mechanical, pneumatic, hydraulic and thermal energy and includes chemical, water, steam and gaseous energy systems. Lockout/Blockout procedures prevent the unexpected energization, start up or release of stored energy that could cause injury to employees working on equipment.

The purpose of this program is to identify the practices and procedures necessary to shut down and lock out or tag out machines and equipment. It also requires that employees receive training in the Lockout/Blockout program before they are authorized to perform service and maintenance requiring Lockout/Blockout.

4.0 SCOPE AND APPLICATION

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

This program does not apply in the following situations:

- A. Servicing or maintaining of cord and plug connected electrical equipment. Cords should remain unplugged and under the supervision of the employee throughout the operation.

- B. During hot tap operations that involve transmission and distribution systems for gas, steam or water when they are performed on pressurized pipelines. Hot tap operations must have an approved specific SOP in place prior to performing the operation.
- C. When employees are provided with an alternative type of protection that is equally effective.

Note: See CSUF Electrical Safety Program for additional information on electrical applications of Lockout/Blockout.

5.0 DEFINITIONS

Affected Employee: Any person (faculty, staff, employee, or student) who operates or maintains equipment that may be locked/tagged out. Also, any person who works in an area where equipment is being serviced.

Authorized Employee: Any qualified person (faculty, staff, employee, or student) who locks/tags out specific machines or equipment in order to perform cleaning, repairing, servicing setting up, adjustment operations, or maintenance. Authorized Persons must initially complete Lockout/Blockout training and will receive equipment-specific training and certifications, when required.

Capable of Being Locked Out: An energy-isolating device is capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed or it has a locking mechanism built into it. Other energy-isolating devices are capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy-isolating device or permanently alter its energy control capability.

De-energization: Parts are de-energized when the working potential is completely depleted, discharged, or has returned to a non-hazardous state.

Energy: (includes, but is not limited to)

Chemical energy – flammable or reactive: i.e. natural gas, propane

Electrical energy – potentially hazardous voltage (>50 volts), hazardous static electrical potentials, or may be stored in a capacitor.

Mechanical energy – moving links, bars, chains, belts, sliders, wheels, shafts, gates, rams, blades, pistons, etc.

Potential or stored energy – pressure (above ambient pressure) vacuum (below ambient pressure), gravity, springs, batteries, or capacitors.

Electromagnetic energy – radio waves, microwaves, infrared, ultraviolet, x-rays and high-level magnetic fields.

Energy Control Point: The single point at which hazardous energy flow can be effectively and positively blocked so that it can no longer cause injury or loss of resources. There may be more than one Energy Control Point on a tool.

Energy Control Procedure:

Specific Steps for shutting down and isolating hazardous energies.
Procedures for applying, removing, and transferring Lockout/Blockout devices.
Requirement for testing a machine/piece of equipment to determine and verify the effectiveness of Lockout/Blockout procedures.

Energy-Isolating Device: A mechanical device that physically prevents the transmission or release of energy. Examples of energy-isolating devices are a manually operated circuit breaker, a disconnect switch, a valve, a mechanical blocking device, or any similar device used to block or isolate hazardous energy.

Energized: Connected to an energy source or containing residual or stored energy.

Impracticable: A Lockout Blockout that cannot be performed due to equipment, engineering or work environment difficulties that would increase the potential hazard to employees who perform the Lockout Blockout or equipment or process design that does not allow for isolation of hazardous energy. This does not include convenience or production impact.

Lockout: The placement of a physical restraint energy-isolating device, which ensures that the equipment cannot be operated or release a hazardous energy.

Lockout Device: A device that utilizes a positive means such as a lock to hold the energy-isolating device in the safe position and prevent the energization of a machine or equipment. Included are blank flanges and bolt slip blinds. The Federal OSHA regulation specifies that the lockout device must be substantial so that it cannot be easily removed or defeated without excessive force or unusual techniques. (e.g. bolt cutters, hacksaw).

Lockout: A device that attaches to a hazardous energy control point that provides the lockout function of an actual locking device, yet enables multiple users to attach their individual locks. Typical devices have the capability to attach 6 or more additional locks.

Lock Box: An approved box or container into which a key or set of keys could be placed. Lock boxes shall be substantial enough to prevent entry without the use of excessive force or unusual techniques; such as with the use of bolt cutter or other metal cutting tools. Lock boxes must be capable of being locked out with a hasp or other means of attachment to which, or through which, a lock and/or lockout scissors can be affixed.

Servicing and Maintenance: Any scheduled or unscheduled activity that, when complete, will enable the machine to perform its intended function; such as constructing, installing, setting up, adjusting, inspecting, demobilizing, modifying, and maintaining and/or servicing machines or equipment.

Standard Operating Procedure (SOP): A specific procedure applied to a specific device to be used in substitution for this Lockout/Blockout policy.

Tagout: The placement of a warning/identification tag on an energy-isolating device to indicate that the equipment must not be operated. Identifies the person who applied the lock/tag.

Tagout Device: Must include Employee's Name, warning against hazardous condition if the machine or equipment is energized and a legend such as the following: "Do Not Start, Do Not Open, Do Not Close, Do Not Energize, Do Not Operate Wires, tie wraps, or cords shall be used for securing the tags to the energy control point and must be able to withstand 50 lbs. of force."

6.0 LOCKOUT/BLOCKOUT PROCEDURES

6.1 Preparation for Shutdown

1. Obtain the Lockout/Blockout devices and tags.
2. Affected employees shall be notified by a supervisor or an authorized employee of the application and removal of the lockout devices or blockout devices. Notification shall be given before the controls are applied, and after they are removed from the machine or equipment.
3. Read and understand the equipment-specific standard operating procedure.
4. Locate each energy control point on the equipment.
5. Power down the equipment.
6. Isolate the equipment from all hazardous energies sources.

6.2 Application of Lockout/Blockout

1. Apply the Lockout/Blockout device so that it locks the energy-isolating device in the SAFE position. Affix the tag directly to each lock.
2. Dissipate, drain, or safely release any stored or residual energy in the system after Lockout.
3. Verify that all sources of hazardous energies have been isolated. This should be done by measuring the energy with a meter or gauge and by trying to start the equipment. Prior to using the meter/gauge, ensure it is functioning properly. Be sure to return all switches to the SAFE position after testing.

6.3 Preparation for Re-Energization

1. Inspect the work area to ensure that all nonessential items, tools, etc., have been removed from the danger zone.
2. Check that all the guarding and safety controls have been properly replaced.
3. Notify affected employees and ensure that all personnel are in a safe location before re-energization.

6.4 Removal of Lockout/Blockout

1. Remove the Lockout/Blockout locks and tags.
2. Re-energize the equipment according to start-up procedures in SOP.

6.5 Temporary Removal of Lockout/Blockout

1. Clear equipment of tools and materials.
2. Remove affected Employees from equipment area.
3. Remove Lockout/Blockout devices.
4. Energize and proceed with testing or positioning.
5. De-energize all systems and reapply energy control measures in accordance with procedures.

Note: *In situations in which Lockout/Blockout devices must be temporarily removed from the energy isolating device and the equipment energized to test or position the equipment, follow the steps above.*

6.6 Emergency Lock Removal of Lockout/Blockout

Only the employee that locks and tags out machinery, equipment or processes may remove his/her lock and tag. However, should the employee leave the facility before removing his/her lock and tag, the Department Manager may remove the lock and tag. The Department Manager will use the Emergency Lock Removal Form (Appendix A) and assure that all tools have been removed, all guards have been replaced and all Employees are free from any hazard before the lock(s) and tag(s) are removed and the machinery, equipment or process is returned to service. The employee who placed the lock shall be physically accounted for prior to lock removal.

6.7 Lockout/Blockout Devices

In most instances, 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 should be taken to ensure that procedures are safely carried out.

The following are requirements for Lockout/Blockout devices:

1. Departments are responsible for providing employees with a sufficient number of devices for control of hazardous energy.
2. Lockout/Blockout devices must be used only for controlling energy and shall not be used for other purposes.
3. Lockout/Blockout devices must be capable of withstanding the environment for the period of 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 unreadable.

4. Locks utilized for the Lockout/Blockout process are standardized in that all locks are to be the same shape. All locks utilized by University employees are to be square in shape. Different colors may be used for different shops and/or shifts. Tagout devices are standardized in that all University employees are to utilize separate tags that are able to withstand the outdoor elements.
5. Lockout devices must be sturdy enough to prevent removal without the use of excessive force. Blockout devices must be sturdy enough to prevent inadvertent or accidental removal. Blockout attachment devices must be non-reusable and self-locking.
6. Lockout/Blockout devices must indicate the identity of the employee applying the device. Blockout 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, Do Not Operate, etc."

7.0 RESPONSIBILITIES

7.1 Supervisors

1. Ensure that only authorized employees, who are qualified and trained, apply and remove locks and tags. Ensure that employees who are found to have insufficient skills or understanding of Lockout/Blockout requirements do not perform Lockout/Blockout and are retrained.
2. Implement, manage, and audit personnel for conformance with the Lockout/Blockout Program.
3. Ensure that all safety equipment is stocked, stored, and maintained in a state of readiness and is available for employee use.
4. Ensure that any deficiencies or deviations found in the working procedures are corrected.
5. Ensure all employees are properly trained in Lockout/Blockout procedures.
6. Develop specific SOPs for equipment as needed.

7.2 Authorized Employees:

1. Shall perform Lockout/Blockout activities that are in conformance with this policy.
2. Retain control of the equipment, system or machinery while a Lockout/Blockout is in progress and work only under their own lock and tag.
3. Maintain Lockout/Blockout hardware and tags in good condition.
4. Complete all training required to be authorized to work with specific equipment, tool(s) or machinery.

7.3 Affected Employees

1. Be aware and knowledgeable of the intent and requirements of the Lockout/Blockout Program.
2. Complete required training.
3. Be knowledgeable of energies associated with the equipment.

7.4 Environmental Health and Safety/Risk Management (EH&S/RM)

1. Works with management to ensure compliance with this document and all other regulatory requirements.
2. Assists in developing specific SOPs as needed.
3. Ensures a system is in place to properly train employees.
4. Reviews campus program periodically to ensure the content of this document and employee practices are current with OSHA regulations and maintain audit documentation.
5. Communicates the expectations of this guideline to contractors as appropriate.

8.0 EMPLOYEE TRAINING

The Departments will be responsible to provide training to ensure the purpose and function of the Lockout/Blockout program is understood by all authorized and affected employees. EH&S/RM will be available to assist the Departments in providing training.

8.1 Training on the purpose, content and function of the Lockout/Blockout program is required for all employees who participate in or are affected by the Lockout/Blockout of equipment. Training can be obtained through department-specific training or by attending training offered by EH&S/RM. Records must be kept showing training dates, attendance, items covered, and trainer.

8.2 Authorized Employees

Authorized Employees are those who have received proper training *and* have been “authorized” by their department to apply Lockout/Blockout devices when necessary. Training for authorized employees shall include:

- 1 The recognition of locations, types and magnitudes of potential hazardous energy sources in the work area.
- 2 Proper Lockout/Blockout procedures.
- 3 Proper use of Lockout/Blockout devices (and any related equipment) used by the department.
- 4 Lockout/Blockout device removal.
5. How to deal with special conditions.

8.3 Affected Employees

Affected Employees are those employees affected by the shut down or who work in areas where equipment is being serviced/maintained. Training for Affected Employees shall include:

1. Purpose and use of the Lockout/Blockout procedures
2. How to recognize Lockout/Blockout equipment
3. Prohibition on tampering with Lockout/Blockout equipment

8.4 Retraining

Retraining is required whenever:

1. There is a new or revised energy control procedure,
2. An Authorized Employee's job duties change (regarding Lockout/Blockout),
3. The Lockout/Blockout Program is changed,
4. Additional Lockout/Blockout hazards arise, such as new equipment, modified processes, or the use of different Lockout/Blockout devices,
5. Periodic inspections show employee deficiencies in energy control techniques.

9.0 OUTSIDE CONTRACTORS

9.1 Employees who oversee outside servicing personnel (i.e., contractors), are responsible for:

1. Informing outside contractors about Lockout/Blockout procedures.
2. Ensuring outside contractors provide information about their Lockout/Blockout procedures.
3. Informing supervisors of affected employees, about the outside employer's Lockout/Blockout procedures.

9.2 Supervisors are responsible for informing affected employees under their supervision about outside contractors Lockout/Blockout procedures.

9.3 Where construction projects require access to equipment, Environmental Health & Safety/Risk Management and supervisors who are familiar with the equipment are responsible for:

1. Informing contractor oversight personnel of all such equipment during the design phase of the project (provided they are involved in the preconstruction process).
2. Working with contractor oversight personnel throughout the construction phase to assure that qualified employees familiar with the equipment are working with contractor personnel to fulfill the requirements of this program.

10.0 RECORDKEEPING

All University Lockout/Blockout Program records will be maintained by the individual departments. The records must include:

1. Specific Lockout/Blockout Standard Operating Procedures for equipment covered by the program.
2. Employee attendance sheets and training summaries.