

LOCKOUT/TAGOUT/BLOCKOUT PROGRAM

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PURPOSE

The purpose of this policy is to protect Employees from the possibility of injury or death as a result of the unexpected startup of a machine or other piece of equipment. The procedures identified in this plan establish the minimum requirements for the lockout of energy whenever maintenance or servicing is performed on machines or equipment. The procedures shall be used to ensure machines or equipment are stopped, isolated from all potentially hazardous energy sources, and locked out, tagged out, or blocked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine(s) or equipment or release of stored energy could cause injury.

OBJECTIVE

This policy establishes Mariposa County's procedure to lockout, tagout, blockout, or otherwise de-energize machinery or equipment during times of repair, maintenance, or adjustment. The program provides standards for employee training, basic procedures to ensure safe work practices, and guidelines to be used by County departments in preparing individualized programs, if necessary.

This program identifies documentation, communication, and training necessary to ensure the health and safety of County employees. This procedure sets forth minimum standards for all County departments. Individual departments may implement more stringent standards. Copies of departmental prepared programs are to be provided to the County Risk Manager.

COMPLIANCE

All Employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout, tagout, or blockout procedures. Authorized Employees are required to perform the lockout in accordance with the procedures identified in this plan. All Employees, upon observing machine(s) or equipment which are locked out for the performance of servicing or maintenance, shall not attempt to start, energize, or use the machine(s) or equipment. Under no circumstance should you attempt to perform maintenance or servicing of any equipment identified in this plan unless you have previously received training on the procedures identified below and the use of the specific equipment.

Employees who fail to implement this policy when performing the work outlined in this policy will be subject to disciplinary action in accordance with union agreements and County policy.

RESPONSIBILITIES

The County Risk Manager has the overall responsibility for the development and implementation of this policy. The Risk Manager shall work with department heads to ensure compliance with this program. The County Risk Manager shall conduct periodic inspections of the energy control program, at least annually to ensure that the procedures and requirements of the standard are being followed.

Department heads or their designees are responsible for administration and implementation of this program. Program elements include:

- Procedures
- Identification of hazards
- Employee training
- Lock/Tag/Block assignment

Supervisors are directly responsible for program maintenance, which includes:

- Working with Employees to develop a list of equipment and tasks that require lockout procedures and to make sure that each piece of equipment is permanently labeled with a message such as, "Lockout and Tag required when working on this equipment."
- Working with Employees to locate and identify all switches, valves, or other energy isolating devices that need to be locked out, tagged, and blocked. More than one energy source (electrical, mechanical, or others) may be involved.
- Ensuring that all employees that are required to operate, clean, service, adjust, or repair machinery or equipment are trained in the use of locks, tags and blocks.
- Specifically instructing each employee to block out, de-energize, lockout, and tag any equipment, machine, source of energy, or system during the course of repair, maintenance, cleaning, service, or adjustment.
- Ensuring that locks, tags, and appropriate blocking devices are readily available and identifiable as belonging to a specific employee.
- Ensuring that all procedures are followed.
- Issuing locks, keys, and blocks to employees and maintaining records that identify such equipment as assigned to specific individuals.
- Maintaining documentation of all employee training.
- Providing employees with written authorization, when no alternatives are available, to work on unlocked or energized equipment.

Employees are responsible to make sure that the procedures are followed.

DEFINITIONS

In order to fully understand the policy set forth, it is imperative that all Employees become familiar with the following definitions:

Affected Employee. For the purpose of this section, 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.

Authorized Employee or Person. For the purposes of this section, a qualified person who locks out or tags out specific machines or equipment in order 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 including performing cleaning, repairing, servicing, setting up, and adjusting operations covered under this section.

Locked out. 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.

Normal Production Operations. The utilization of a machine or equipment to perform its intended production function.

Prime Mover. The source of mechanical power for a machine.

Participant. Any other person(s) engaged in the repair, adjustment, testing, or setting up operation in addition to the qualified operator or craftsman having control of the machine operating station.

SERVICE PROVIDERS AND CONTRACTORS

Service Providers and/or Contractors who are required to perform work on County equipment shall implement and follow their procedures, which shall be compliant with California Title 8, Sections 3314 et. al., as the primary procedures and the County's lockout program as secondary procedures. All Service Providers and/or Contractors must provide documentation to the County's Risk Manager of training and procedures which must be approved by the County. Prior to work being performed, the Risk Manager shall provide the necessary program information to approved Service Providers and/or Contractors in accordance with the above Title 8 regulations.

REVIEW OF PROCEDURES

To ensure that lockout procedures are relevant and provide the necessary safe guards, the Risk Manager will conduct an annual review of all lockout procedures. The purpose of this review will be to determine if any changes, modifications, updates, or revisions are necessary to continue the safe maintenance, repair, and servicing of County equipment and machinery. After initial reviews are conducted, the Risk Manager will conduct a review with Affected Employees. Reviews will be recorded in Appendix C.

REQUEST FOR CHANGES TO LOCKOUT PROCEDURES

There may be occasions in which you feel that the lockout procedures do not adequately protect you from unexpected start up or that the procedure is no longer relevant to the equipment/machinery on which you work. Examples of this may be that the machine has been modified from a corded plug to a hard wired energy source. In events such as these, lockout procedures should be reviewed by the Risk Manager. If you feel that changes should be considered, you should notify your Department Head in person prior to beginning any work on the specified piece of equipment. Upon notification of the Department Head, a Request for Evaluation of Lockout Procedures (Appendix B) should be completed.

Locksets

Each Authorized Employee will be issued a unique set of locks to be utilized in conjunction with this program. Each lock will be issued with a unique key that will unlock the lockset. This lock key and lockset will be assigned to you. Under no circumstance should you lend or loan your lockset to another Employee. Your key is unique to you and will ensure that your fellow co-workers cannot remove your lockset from an energy control source. You should never lend or loan your key to any other Employee.

Missing Keys or Locksets

In the event that you have lost or misplaced your lockset's key, you shall immediately notify your Department Head. At that time, you will turn in your lockset for disposal or rekeying by the County locksmith.

Transfer of Locksets

To ensure the safety of you and your fellow co-workers, the transfer of locksets between Employees is strictly forbidden.

SECTION I - ENERGY CONTROL PROCEDURES

Energy control procedures consist of:

- Lockout/Tagout/Blockout
- Periodic Inspections
- Employee Training

Lockout/Tagout/Blockout

If an energy-isolating device is not capable of being locked out, a tagout system shall be implemented.

If an energy-isolating device is capable of being locked out, then the following procedures will apply prior to any maintenance or servicing:

- Each Employee working on equipment places his/her **own** lock and tag on the lockout mechanism and maintains the key in a visible position on their person. (This can be on a belt loop, key ring, or other visible location but not in an area which would interfere with job safety).

- The Risk Manager will keep a master key to open any lock.
- Each Employee is responsible for removing his/her lock upon completion of their assigned function.
- If equipment operations continue across shifts, then the equipment lockout remains in place. Others working on equipment continue placing their lock in addition to the locks present.

Employee Training

Each Employee authorized to work on equipment for set-up, maintenance, installation, or other reason shall receive training on lockout and tagout (energy control) procedures prior to performing any work outlined by these procedures. All Employees shall be instructed in the safety significance of the lockout procedures. Each new or transferred Affected Employee shall be instructed in the purpose and use of the lockout procedure. Training will consist of the following:

- Purpose and use of energy control procedures
- Review of County energy control procedures
- Recognition of applicable hazardous energy sources
- Identification of types and magnitude of energy sources in the workplace
- Methods and means of energy isolation and control
- Limitations of tagout
- Emergency information

All training will be documented in accordance with the County's IIPP and record retention policies.

SECTION II - LOCKOUT/TAGOUT PROCEDURES

1. This program utilizes the concept of Zero Mechanical/Energy State (ZMES), which requires a source of energy, whether mechanical, electrical, active, or stored, to be blocked out, de-energized, or otherwise shut down. ZMES is to be established on all equipment and machinery, work processes, or operating systems that require maintenance, repair, adjustment, or servicing.
2. The procedures outlined in this program apply to all moveable, electrically energized, or pressurized equipment and systems during installation, repair, maintenance, servicing, cleaning, or adjustment. They do not apply to routine operational adjustments or set-up procedures such as adjusting work in a lathe, drill press, etc., as long as the machine operator retains personal control over the machine or equipment.

3. When maintenance is required to "troubleshoot" equipment or systems while under ZMES, locked out and tagged, the maintenance supervisor or responsible designee shall indicate "Troubleshooting" on the tag. Locks may then be removed and test instruments used.
4. When equipment is being balanced in place, a lock is not required. However, a "DANGER - DO NOT OPERATE" tag must be completed and placed on the starter before work begins and must remain on the starter during the balancing operation.
5. During the repair of steam traps, a completed, "DANGER - DO NOT OPERATE" tag may be signed by the maintenance employee and used in place of a safety lock and device.
6. Special procedures developed by installation engineers for securing new equipment during installation must meet the procedure's minimal requirements. Procedures developed for this purpose shall become a permanent addendum to the program after approval by department management.
7. In the event that it is not practical to lock out a piece of equipment, process, or system, removal of power cords or fuses, disconnection of pressurized cylinders, or use of blocks to prevent movement may be used. Such alternative methods must be approved by the department head or designee before adoption and listed in this program as an addendum. Management personnel are the only individuals authorized to permit work on energized machinery or equipment. All such authorization shall be written.
8. Where several employees are involved with working on a single piece of equipment, the maintenance supervisor will designate a single individual responsible for the initial shut down, tagging out, and assuring ZMES of equipment. The safety lock and device of this designated individual will be the first applied and the last removed.
9. The maintenance supervisor shall verify that such designated individual is aware of the motor control center, all switches, valves, and devices that need to be in a ZMES, locked and tagged.
10. The designated individual will verify ZMES by trying to restart the equipment and checking its interlocks after it has been locked out.

SHUTTING DOWN AND STARTING UP

The identified procedures for the application of energy control shall include the following elements and actions to be done in the following sequence:

1. **Preparation for shutdown.** Before lockout commences, job authorization should be obtained.

Before an Authorized Employee shuts down equipment, the Authorized Employee shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the methods or means to control the energy [there may be more than one energy source

(electrical, mechanical, or others) involved]. Any questionable identification of sources shall be cleared by the Employees with their supervisors.

2. **Notification of Affected Employees.** The Authorized Employee will notify the site administrator and other "affected" Employees of the intention to lockout and identify the equipment to be locked and/or tagged.
3. **Donning of Personal Protective Equipment.** Each Authorized Employee who will perform servicing, repair, or maintenance of equipment will don the appropriate personal protective equipment.
4. **Machine or equipment isolation.** All energy isolating devices which are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source.
5. **Machine or equipment shutdown.** Operate the switch, valve, or other energy isolating device(s) so that the energy source(s) (electrical, mechanical, hydraulic, other) is disconnected or isolated from the equipment. Stored energy, such as that in capacitors, springs, elevated machines, Employees, rotating fly wheels, hydraulic systems, and air, gas, steam, or water pressure must also be dissipated or restrained by methods such as grounding, repositioning, blocking, and bleeding down.
6. **Lockout or tagout device application.** Lockout and/or tagout devices shall be applied only by Authorized Employees. Each Authorized Employee working on the device shall apply their own individual lock, where applicable. Lockout devices, where used, shall be applied in a manner which holds the energy isolating device in a "safe" or "off" position. Tagout devices, where used solely, shall be applied in a manner which clearly indicates that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited. All tagout devices shall include the Authorized Employee's contact information if the lockout is expected to remain in place for an extended length of time.
7. **Stored energy.** Following the application of energy control devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, or otherwise rendered safe.
8. **Verification of isolation.** The Authorized Employee shall verify that isolation and de-energization of the intended equipment has been accomplished prior to commencing any work on the equipment.

SECTION III - RELEASE FROM LOCKOUT OR TAGOUT

Before lockout or tagout devices are removed and energy restored to the isolated machinery or equipment, the following procedures shall be followed:

1. The Authorized Employee shall inspect the authorized work to ensure that nonessential items have been removed and that the machine or equipment is operationally intact, assembled properly, and is safe to operate for its intended use.
2. Check the work area to ensure all Employees have been safely positioned or removed.
3. Each lockout and/or tagout device shall be removed from each energy isolating device only by the Employee who applied the device.
4. Affected Employees shall be notified that the lockout or tagout device(s) have been removed before the machine or equipment is to be started.
5. Start equipment.

SECTION IV - ADDITIONAL REQUIREMENTS

Special Applications

On occasion, a new and/or special application may arise and not be covered in procedures by this policy. If this occurs, the Risk Manager will determine the safest method for performing the task and facilitating lockout/tagout.

Testing or Positioning of Machines or Equipment

If energy control devices must be temporarily removed for testing or positioning of the machinery or equipment, the following shall apply:

1. Clear the machine or equipment of tools and materials
2. Remove Employees from the machine or equipment area
3. Remove lockout or tagout devices as specified in Section III of this plan
4. Energize and proceed with the testing or positioning
5. De-energize all systems and reapply energy control measures in accordance with the provisions of this plan
6. Continue maintenance or servicing as scheduled

Shift or Personnel Changes

The Risk Manager shall be responsible for ensuring the continuity of protection and an orderly transfer of energy control devices between off-going and incoming Employees.

Procedure Involving More Than One Employee

In the preceding steps, if more than one individual is required to lock out equipment, each shall place his/her own personal lock on the energy isolating device(s). One designated individual of a work crew or a supervisor, with the 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.

REFERENCES

<u>Agency</u>	<u>Section</u>	<u>Link</u>
Cal-OSHA	Title 8	https://www.dir.ca.gov/samples/search/query.htm
Cal-OSHA	3314	https://www.dir.ca.gov/title8/3314.html
Cal-OSHA	2940.13	https://www.dir.ca.gov/title8/2940_13.html

Appendix A– Lockout/ Tagout/ Blockout Program

Procedure for Breakers, Generators, All HVAC Units, Garbage Disposals, Hand Dryers, Electric Roll Up Doors

PROCEDURE NUMBER: 001

DATE: _____ COMPLETED BY: _____

PROCEDURE FOR CONTROLLING HAZARDOUS ENERGY

1. Be familiar with the sources of hazardous energy for the machine or equipment that will be serviced.

SOURCES OF HAZARDOUS ENERGY

Electrical ___ Engine ___ Spring ___ Counter Weight ___ Flywheel ___ Hydraulic
___ Pneumatic ___ Chemical ___ Thermal ___ Other _____

2. Notify Affected Employees that the machine is about to be shut down and locked out.

3. Isolate all energy sources listed above by identifying the breaker that needs to be locked out. Turn off the breaker.

4. Apply the breaker locks to all isolation devices operated in step three.

Specific Instructions:

5. Block or dissipate all stored energy in rams, flywheels, springs, pneumatic, or hydraulic systems, etc.

6. Verify that the machine is locked out by testing the machine operating controls.

RETURN ALL CONTROLS TO THE “NEUTRAL” OR “OFF” POSITION AFTER TESTING.

OTHER COMMENTS

Some HVAC units use pull out fuse block disconnects. In this case, the technician will pull the fuse block and lock the cover on the disconnect box.

Appendix A– Lockout/ Tagout/ Blockout Program

Procedure For Water Valves

PROCEDURE NUMBER: 007

DATE: XXXX **COMPLETED BY:** XXXXX

PROCEDURE FOR CONTROLLING HAZARDOUS ENERGY

1. Be familiar with the sources of hazardous energy for the machine or equipment that will be serviced.

SOURCES OF HAZARDOUS ENERGY

Electrical Engine Spring Counter Weight Flywheel Hydraulic

Pneumatic Chemical Thermal Other water

2. Notify Affected Employees that the machine is about to be shut down and locked out.

3. Isolate all energy sources listed above. Above ground valves and valves located in vaults need to be shut off.

4. Lock the valve with a chain on the shut off wheels. A lockout tag should be installed on the chain identifying the technician's contact information.

5. Block or dissipate all stored energy in rams, flywheels, springs, pneumatic, or hydraulic systems, etc.

6. Verify that the machine is locked out by testing the machine operating controls.

RETURN ALL CONTROLS TO THE "NEUTRAL" OR "OFF" POSITION AFTER TESTING.

Appendix A– Lockout/ Tagout/ Blockout Program

Procedure For Gas Valves

PROCEDURE NUMBER: 008

DATE: XXXX **COMPLETED BY:** XXXX

PROCEDURE FOR CONTROLLING HAZARDOUS ENERGY

1. Be familiar with the sources of hazardous energy for the machine or equipment that will be serviced.

SOURCES OF HAZARDOUS ENERGY

Electrical Engine Spring Counter Weight Flywheel Hydraulic
 Pneumatic Chemical Thermal Other Gas

- 2. Notify Affected Employees that the machine is about to be shut down and locked out.
- 3. Isolate all energy sources listed above by shutting off the appropriate valve.
- 4. Apply the appropriate locks to all isolation devices operated in step four.
- 5. Block or dissipate all stored energy in rams, flywheels, springs, pneumatic, or hydraulic systems, etc.
- 6. Verify that the machine is locked out by testing the machine operating controls.

RETURN ALL CONTROLS TO THE “NEUTRAL” OR “OFF” POSITION AFTER TESTING.

Appendix A– Lockout/ Tagout/ Blockout Program

Procedure For Manual Roll Up Doors

PROCEDURE NUMBER: 010

DATE: XXXX **COMPLETED BY:** XXXX

PROCEDURE FOR CONTROLLING HAZARDOUS ENERGY

1. Be familiar with the sources of hazardous energy for the machine or equipment that will be serviced.

SOURCES OF HAZARDOUS ENERGY

Electrical Engine Spring Counter Weight Flywheel Hydraulic
 Pneumatic Chemical Thermal Other _____

2. Notify Affected Employees that the machine is about to be shut down and locked out.

3. Isolate all energy sources listed above.

4. Apply the appropriate locks to all isolation devices operated in step four.

5. Block or dissipate all stored energy in rams, flywheels, springs, pneumatic, or hydraulic systems, etc. While working on manual doors, they should be blocked at the door track by placing a block to stop the door from lowering. The pulley tension assembly should never be worked on with the door in the down position. These have a tension load when they are in the down position.

6. Verify that the machine is locked out by testing the machine operating controls.

RETURN ALL CONTROLS TO THE “NEUTRAL” OR “OFF” POSITION AFTER TESTING.

Appendix B – Lockout/ Tagout/ Blockout Program

Request for Evaluation of Lockout Procedures

Employee Name: _____ Date: _____

Site: _____

Machine Name: _____

Procedure to be evaluated: _____

Reason for request to evaluate: _____

Employee Name: _____ Date: _____

Reviewed by: _____

Risk Manager Signature: _____ Date: _____

