

MARICOPA COUNTY COMMUNITY COLLEGE DISTRICT

Lock-Out/Tag-Out Program

March 1, 2013

I. PURPOSE

This program is established to protect MCCCDC employees from the serious injuries that could result during the unexpected energization, start-up or release of stored energy while servicing or repairing machinery or equipment. Applicable energy sources include, but are not limited to: electrical, thermal, mechanical, hydraulic, pneumatic and chemical.

This document contains the necessary elements of a hazardous energy control program, which includes documented Lock-Out/Tag-Out (LOTO) procedures, employee training and periodic inspections as required by the Occupational Safety and Health Administration (OSHA) Control of Hazardous Energy Sources Standard, 29 CFR 1910.147.

II. DEFINITIONS

Authorized Employee: An employee who locks and/or tags machines or equipment (tools) in order to perform servicing or maintenance.

Affected Employee: An employee who is required to use machines or equipment (tools) on which servicing is performed under the LOTO program or who performs other job responsibilities in an area where such servicing is performed.

Energized: Machines or equipment are energized when they are connected to an energy source or they may contain residual or stored energy in a form as listed in the first paragraph of this written program.

Energy-Isolating Device: A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: Manually operated circuit breaker; disconnect switch; manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and, in addition, no pole can be operated independently; line valve; block or any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.

Energy Source: Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy.

Lockout: The placement of a Lockout device on an energy-isolating device, in accordance with an established procedure, ensuring the energy-isolating device and the equipment being controlled cannot be operated until the Lockout device is removed.

Lockout Device: Any device that uses positive means, such as a lock, blank flanges and bolted slip blinds, to hold an energy-isolating device in a safe position, thereby preventing the energizing of machinery or equipment.

Servicing and/or maintenance: Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, maintaining and/or servicing machines or equipment, including lubrication, cleaning or unjamming of machines or equipment, and making adjustments or tool changes, where employees could be exposed to the unexpected energization or start-up of the equipment or release of hazardous energy.

Tagout: The placement of a Tagout device on an energy-isolating device, in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled may not be operated until the Tagout device is removed.

Tagout Device: Any prominent warning device, such as a tag and a means or attachment that can be securely fastened to an energy-isolating device to indicate the machine or equipment to which it is attached may not operate until the Tagout device is removed.

III. RESPONSIBILITIES

- A. The College President will support this written program, provide resources and personnel necessary to ensure compliance with this written program and annually verify that the provisions of this written standard are being adhered to. Additionally, the College President will ensure all employees receive the necessary training and instruction regarding their assigned roles and responsibilities to comply with this written program.
- B. Directors and Supervisors will communicate to employees the importance of implementing LOTO procedures and make the written LOTO program readily available to them. They will also perform the following activities:
 - 1. Identify all **authorized employees** and ensure they attend initial training (or re-training) on LOTO procedures.
 - 2. Develop machine and/or equipment (tool) specific LOTO procedures when necessary.
 - 3. Conduct periodic LOTO inspections, correcting any deviations or inadequacies found, as required by this written program.
 - 4. Provide authorized employees with individually assigned LOTO devices.
 - 5. Ensure employee training records are properly maintained by the Employee Organization Learning Team (EOLT).
- C. Authorized Employees are responsible for performing the following activities in support of this written standard:
 - 1. Comply with the LOTO procedures outlined in this written program when performing service or maintenance work on machines or equipment.

2. Use only approved LOTO devices when performing work on machines and/or equipment. **NEVER** use LOTO approved devices for **ANY** other purpose than to perform LOTO activities.
 3. Remove their individually assigned LOTO devices once service or maintenance work is completed. LOTO devices may not be left on a machine or equipment beyond the authorized employee's shift without explicit supervisor approval.
 4. Attend training sessions as required by this written program and/or as deemed necessary by their supervisor.
 5. Notify supervisors and lead employees of any change in the workplace or job duties which would prevent them from following the LOTO procedures.
- D. District Occupational Health and Safety Manager is responsible for performing the following activities in support of this written standard:
1. Assist the college with the development, publishing and updating of their written LOTO program in compliance with Federal and state law.
 2. Assist supervisors and lead employees with their annual and periodic LOTO program inspections when requested.
 3. Perform liaison duties between college employees needing training on the LOTO program and the Employee Organizational Learning Team (EOLT) when requested.

IV. EXEMPTIONS

- A. Minor servicing activities taking place during normal business operations that are routine, repetitive and integral to the use of machines or equipment, provided that:
1. There is no bypass or removal of guards or other safety devices;
 2. Employees are not required to place any part of their bodies into a point of operations (pinch point) or where other associated dangers exist (or may exist);
 3. Extensive disassembly of equipment is not required to perform the servicing; and
 4. Effective alternate protection measures are used which allow an employee to perform minor servicing without being exposed to the unexpected release of hazardous energy.
- B. Cord and plug connected electrical equipment that, when unplugged, contains stored energy and cannot be unexpectedly energized. The plug must be under the exclusive control of the authorized employee working on the equipment. (**NOTE: a plug is in exclusive control of an employee if it is physically in the employee's possession or within arm's reach and in the line of sight of the employee.**)
- C. Service on pressurized gas, steam, water and petroleum products and systems where continued operation is essential, shutdown is impractical and special equipment is used providing proved effective protection for employees.

V. GENERAL LOTO PROCEDURES

The following procedures apply in situation where ONLY ONE energy source exists for machinery or equipment. To properly de-energize and eliminate all sources of potential hazardous energy during servicing and maintenance operations and to prevent an employee from omitting an important step in the energy control procedure, **authorized employees** must follow the Shutdown and Re-Start procedures:

A. Shutdown Procedures and Establishing LOTO

1. Prepare for Shutdown – Locate and Identify: Survey the work area to locate and identify all energy isolating devices to be certain which switch(s) and valve(s) apply to the machine or equipment to be locked out. (NOTE: If more than one energy source is involved, the Machine Specific LOTO Procedures must be followed).
2. Notify: All affected employees must be notified that a LOTO is about to take place, the reasons for the LOTO and the specific machinery or equipment affected.
3. Shutdown: If the machine or equipment is operating, shut it down using the normal stopping procedures (i.e. depress stop button, open toggle switch, etc.).
4. Isolate: Operate the disconnect switch, circuit breaker, valve or other energy isolating device to isolate (disconnect) the machine or equipment from its energy source.
5. Lockout and Tagout (LOTO): Apply individually assigned LOTO devices to the energy isolating device.
6. Relieve/Release Stored Energy: Stored energy may be in machines or equipment such as rotating flywheels, hydraulic systems, springs, etc. The stored energy must be dissipated for retrained by grounding, locking, bleeding down, etc.
7. Clear the Area and Test: Clear the area around the machine or equipment. Make sure all personnel are safely positioned or removed from the area. Then test all the operating controls by putting them in the “ON” position to ensure the energy source has been successfully disconnected. (CAUTION: Return the operating control(s) to the neutral or off position before proceeding with servicing or maintenance work).
8. **LOTO IS NOW COMPLETE:** The **authorized employee** may now proceed with performing the servicing or maintenance work.

B. Re-Start Procedures and Removal of Locks/Tags

1. Check Machine or Equipment: Check the machine or equipment and the surrounding area to ensure that nonessential objects have been removed, guards have been reinstalled and the machine or equipment is operationally intact.
2. Verify: Be sure to verify the controls on the machine or equipment are in the “NEUTRAL” or “OFF” position and all the employees are safely positioned or removed from the area.
3. Remove Locks and Tags: Remove all LOTO devices and re-energize the machine or equipment.

4. Notify Affected Employees: Before re-starting machinery or equipment, notify affected employees the servicing or maintenance is complete and the locks and tags have been removed.

VI. SPECIAL CIRCUMSTANCES

1. LOTO Procedure Involving More Than One Person (Group LOTO): If more than one **authorized employee** is required to Lock-Out or Tag-Out equipment, each person shall place their own personal LOTO device on the energy isolating device(s). When an energy isolating device cannot accept multiple locks, a multiple lock hasp will be used. As each person no longer needs to maintain his/her lockout protection, that person will remove his/her lock from the hasp. Employees must NEVER depend upon someone else's lockout device and must ALWAYS use his/her individually assigned LOTO device.
2. Tag-Out Only Procedure: Tagout without a lock is allowed ONLY when machinery or equipment is incapable of being locked out. Tagout may be implemented ONLY with the prior knowledge and approval of the appropriate supervisor, using the following procedures.
 1. The **authorized employee** will advise the supervisor that Lockout is not possible.
 2. The **authorized employee** and the supervisor will determine if other equally effective controls can be implemented, such as the removal of a valve stem, isolating circuit element or by blocking a control switch.
 3. Supervisors must provide training to the **authorized** and **affected** employees involved in the Tagout operation at the time Tagout is to be conducted.
 4. The **authorized employee** will follow the applicable LOTO procedures outline in this written program omitting Lockout.
 5. The **authorized employee** will securely attach his/her Tagout device to the energy isolating device where the Lockout device would have been attached if Lockout was possible.
3. Shift Changes: When machinery and equipment must be serviced by more than one shift, a procedure must be established for the orderly transfer of responsibility from one shift to another. In developing this procedure, the following must be taken into account.
 1. Each **authorized employee** must ensure machine or equipment he/she is working on is Locked-Out and Tagged-Out with his/her individually assigned LOTO device. Employees must NEVER depend on someone else's LOTO device for protection.
 2. **Authorized employees** must remove his/her individually assigned LOTO devices once service or maintenance work is completed.
 3. LOTO devices must NEVER be left on the machine or equipment beyond the **authorized employee's** work shift without supervisor approval.

4. Equipment Specific LOTO Procedures: If maintenance or servicing work on a specific machine or piece of equipment required controlling more than one energy source a written LOTO procedure must be developed for each specific machine or piece of equipment. If the methods to control energy sources are identical for a group of machines, then one set of procedures may be used for the group. Contact the District Occupational Health and Safety Manager at (480) 731-8840 if assistance is needed in creating machine or equipment specific procedures.
5. Removing LOTO Devices: The key to each LOTO device must be in the sole possession of the employee to whom it was assigned. Only the **authorized employee** who applied the LOTO device may remove it.

EXCEPTION: When the **authorized employee** who applied the LOTO device is not available to remove it, the device may be removed ONLY under the direction of the Director of Facilities provided:

- Absolute verification has been made to ensure the **authorized employee** is not on campus or otherwise available.
- Every reasonable effort has been made to contact the **authorized employee** to notify him/her their LOTO device has been or will be immediately removed.
- The **authorized employee** is informed before returning to work that his/her LOTO device has been removed.

VII. PERIODIC INSPECTIONS

Documented periodic inspections must be made at least annually by supervisors to verify the LOTO procedures are understood by employees and are being followed properly. The form in APPENDIX A of this written program is provided as a guide for the purpose of documenting the inspection. Please contact the District Occupational Health and Safety Manager at (480) 731-8840 if you need assistance performing inspections.

VIII. CONTRACTORS

Phoenix College's LOTO written program shall be made available for review to all contractors involved in work activities subject to the OSHA Lockout/Tagout regulation (29 CFR 1910.147). The Director of Facilities (or his/her designee) will ensure all contractor(s) have their own LOTO program and follow their own written program while on the jobsite therefore meeting the requirements of 29 CFR 1910.147.

All employees who perform work in cooperation with contractors must be informed of the restrictions and prohibitions associated with an outside contractor's LOTO procedures. At no time is a contractor allowed to remove a PC LOTO device without the expressed permission and under the supervision of the Director of Facilities. If this permission is given to a contractor, the procedures outlined in the REMOVING LOTO DEVICES section of this written program shall apply.

IX. TRAINING

Training will be provided by the Director of Facilities or his/her designee (i.e. EOLT) for all employees affected by this written program, including but not limited to:

- A. **Authorized employees:** Will receive initial training on how to recognize hazardous energy sources, the type and magnitude of the energy available in the workplace and the required LOTO procedures to be followed to ensure energy isolation and control. Re-training will occur whenever one of the following conditions is met:
 - 1. The employee has a job assignment change.
 - 2. A change in machines, equipment or process creates a new hazard.
 - 3. LOTO general procedures change or machine specific LOTO procedures are developed.
 - 4. Observations and/or inspections reveal an employee is not following or doesn't understand the LOTO written program and procedures.

- B. **Affected employees:** Will be instructed on the purpose, use and restrictions of LOTO and how to recognize when LOTO is being implemented.

- C. Training records and documentation will be maintained by the Director of Facilities.

APPENDIX A

PERIODIC LOCKOUT/TAGOUT INSPECTION FORM

PERIODIC LOCKOUT/TAGOUT INSPECTION FORM

Directions:

- Conduct periodic inspections at least annually.
- Keep the completed original form on file with the Director of Facilities.

LOCATION: _____ DATE: _____

MACHINE/EQUIPMENT INSPECTED: _____

List all employees included in the inspection:

1.	2.	3.
4.	5.	6.
7.	8.	9.

Review the LOTO procedures and employee responsibilities with the **authorized employees and complete the following:

Do the employees understand the LOTO procedures and their responsibilities under the Phoenix Community College LOTO written program?

YES ___ NO ___ (If no, please indicate corrective action taken)

Do the employees follow the LOTO procedures?

YES ___ NO ___ (If no, please indicate the corrective action taken)

Are the established LOTO procedures effective to provide full protection?

YES ___ NO ___ (If no, please indicate the corrective action taken)

Other issues or concerns noted by the inspector(s):

Person(s) Conducting Inspection:

Name:	Signature:
Name:	Signature: