



South Central
COLLEGE

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Lockout/Tagout Plan

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PURPOSE

The purpose of this plan is to establish procedures for the use of lockout and tagout of energy isolating devices. It shall be used to ensure the machines or equipment are isolated from all potential hazardous energy, and locked out and tagged out before employees perform service or maintenance activities where unexpected energization, startup or release of stored energy could cause injury. The purpose of this policy as well is intended to comply with OSHA 1910.147 standards.

This plan covers the servicing and maintenance of machines if:

1. An employee is required to remove or bypass a guard or other safety device; or
2. An employee is required to place any part of his/her body into the point of operation of equipment; or
3. Where a danger zone exists while the machine is operating or the equipment cycles.

DEFINITIONS

Affected employee A person who uses equipment that is being serviced under lockout or tagout procedures, or who works in an area where equipment is being serviced.

Authorized employee A person who locks out and/or tags out equipment to do service or maintenance work. An affected employee becomes an authorized employee when that employee's duties include service or maintenance work on equipment.

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

Disconnect A switch that disconnects an electrical circuit or load (motor, transformer, or panel) from the conductors that supply power to it. An open circuit does not allow electrical current to flow. Under a lockout procedure, a disconnect must be capable of being locked in the open position.

Energized Connected to an energy source or containing potential energy.

Energy source Any source of energy. Examples: electrical, mechanical, hydraulic, pneumatic, chemical, and thermal.

Energy-isolating device A mechanical device that physically prevents transmission or release of energy.

Exclusive Control Person who is working on equipment or machine and does not leave that equipment or machine unattended for the duration of repair session, having exclusive or total control over preventing an inappropriate start up or energizing of the equipment or machine.

Hazardous energy Any of the types of energy existing at a level or quantity that could be harmful to workers or cause injury through inadvertent release or start-up of equipment.

Lockout device A device that locks an energy-isolating device in the safe position.

Lockout Placing a lockout device on an energy-isolating device, under an established procedure, to ensure the energy-isolating device and the equipment it controls can't be operated until the

lockout device is removed. (An energy-isolating device is capable of being locked out if it has a hasp that accepts a lock or if it has a locking mechanism built into it.)

Procedure A series of steps taken to isolate energy and shut down equipment.

Servicing or maintenance Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining machines or equipment. Also includes lubricating, cleaning, unjamming, and making adjustments or tool changes if a worker may be exposed to the unexpected startup of the equipment during such activities.

Tagout device A prominent warning sign, such as a tag, that can be securely fastened to an energy-isolating device to indicate that the energy-isolating device and the equipment it controls can't be operated until the tagout device is removed.

Tagout Placing a tagout device on an energy-isolating device, under an established procedure, to indicate that the energy-isolating device and the equipment it controls can't be operated until the tagout device is removed.

PLAN AND PROCEDURE

Lockout shall apply whenever an employee must bypass a guard or place a body part in a machine operating cycle zone during servicing or maintenance. The lockout requirement begins as soon as the machine stops and an employee is required to bypass a guard or to place a body part into a machine danger zone.

OSHA has recognized three exceptions in order to try to accommodate the lockout standard to economic realities and operation necessities. The exceptions are:

Minor Servicing or Maintenance During Normal Production Operations

An employee is allowed to forego locking out the machine during servicing only if alternative measures provide protection against unintended activation of the machine during minor servicing activity. Safeguarding for minor servicing may include interlock barrier guards, local disconnects, presence sensing devices or control switches which are under the direct control of the employee performing the minor servicing, providing they enable the employee to perform such minor servicing without being exposed to the unexpected energization or activation, or the release of stored energy. These activities include:

The use of interlock guards to be used to shut down a machine during normal production operations such as:

- Clearing minor jams
- Minor machine adjustments
- In-process cleaning
- Routine lubrication

The machine must be shut down by opening the specific guard to verify that the electrical interlock is working.

The area that the employee is going into must be the area protected by that guard and that guard must be held open by the person reaching into that section of the machine.

Servicing or Maintenance That Requires Power Intermittently

When a machine must be energized from time to time during maintenance or servicing in order to test or position the machine or machine component, the following procedures must be followed:

- Remove all tools and materials;
- Check to insure the machine is ready for operation;
- Insure all employees are clear of the area while work is to be performed;
- Notify all employees in the area;
- Energize the machine, then test or position it;
- De-energize and re-apply lockout devices following the steps of this program or applicable machine specific standard.

Servicing or Maintenance That Requires Power Continuously

There are certain servicing activities, which by their very nature must take place without de-energization. Lockout cannot be performed during these operations because locking out the equipment requires the equipment be de-energized. If power is needed continuously then it is infeasible to lockout the machine. Alternative protection (i.e., machine guards, etc.) must be used in order to be exempt from the lockout requirements when a machine must be energized during servicing or maintenance.

LOCKOUT PROCEDURES

- Notify affected employees of the piece(s) of the equipment to be locked and tagged out for the purpose of repair or service.
- If the equipment is in operation, shut it down using the manual stopping procedure (i.e., push button, open toggle switch, turn valve off, etc.).
- Operate switches, valves or other energy isolating devices so that the equipment is isolated from its energy source. Store energy (such as that in springs, elevated machine members, rotating fly wheels, hydraulic systems, as well as gas, steam, air or water pressure, etc.) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.
- Lockout and tagout all the energy isolating devices with proper locking and tagging provided for this purpose.
- After ensuring that no personnel are exposed verify that the equipment is isolated by operating the start button or switch (i.e., is air or stem bled off, is mechanical energy restrained or released, such as springs or weights?)
- Return all controls to the off position after verification.
- Restore all equipment to normal operation
 - After all servicing or maintenance is complete, make sure that all maintenance materials and tools are removed from the equipment, clean up affected area, floors, etc., check to see all guards have been replaced.
 - Notify all affected personnel that re-energization is to take place. Ensure that all persons are accounted for and in a safe position.

- Remove lockout and tagout devices, re-energize equipment and test operation. Notify all affected personnel that work is complete and equipment is ready for operation.

CORD AND PLUG PROCEDURES

All portable machines that are powered by electricity only with cord and plug can be locked out in one of the following ways:

- Push STOP button and apply lock and tag through it; or
- Pull DISCONNECT handle down and apply lock and tag through it; or
- Pull PLUG, apply lock box to plug, and then apply lock and tag.

Work on cord and plug connected electric equipment for which exposure to the hazards of unexpected energization or start up of the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the exclusive control of the employee performing the servicing or maintenance may be done without lockout and tagout if the equipment is never left unattended until repairs are complete.

LOCKS AND TAGS

The maintenance supervisors as well as department faculty who maintain a lockout tagout station in their respective area shall maintain the locks and tags and shall provide that lockout/tagout equipment where there is a need to lockout and tagout a machine or equipment. All locks and tags will comply with the requirements of OSHA 29 CFR 1910.147.

Each employee that services and maintains a machine or any piece of equipment within the scope of this program must affix the lock and tag provided by the maintenance supervisors or a faculty member who has a lockout tagout station in their respective area.

Special lock boxes for plugs and valves can be obtained from the maintenance supervisors.

If the maintenance supervisors have verified that the employees have left the premises or if the employee has reported that the key is lost, **IN THESE CIRCUMSTANCES ONLY, CAN THE MAINTENANCE SUPERVISORS REMOVE THE LOCK BY CUTTING IT.** The department shall make a reasonable effort to notify the authorized worker before he/she begins work on the equipment that his/her lock has been removed.

TRAINING

All authorized employees shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available, and the methods and means necessary for energy isolation and control.

All affected employees shall receive training in the methods and means necessary for energy isolation and control as well as the prohibition relating to attempts to restart or re-energize machines or equipment which is locked out and tagged out.

All other workers shall be instructed in the purpose and use of the lockout procedure and shall be instructed about the prohibition relating to attempts to restart or re-energize machine or equipment which is locked and tagged out.

Worker re-training shall be conducted where there is a change in job assignment; in machines, equipment, or processes, which present a new hazard; or where there is a change in the energy control procedures, or in these procedures. Re-training shall also take place whenever a deficiency in this program or its implementation is noted and annually. All training shall be documented.

TAGOUT SYSTEM

The Tagout System will be used only if it has been determined by the maintenance supervisors that the equipment cannot be locked out.

When a Tagout System is used, written procedures shall be developed by the maintenance supervisors and approved by the Security & Safety Director.

These procedures must state the scope, purpose, authorization, rules, and techniques to be used, and include additional safety measures, which will provide full protection. This can include such measures as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or removal of a handle to reduce the likelihood of an inadvertent energization.

When the Tagout System is used, additional documented training must be provided to all workers whose work operations are or may be in the area. The maintenance supervisors and Security & Safety Director must approve all training.

GROUP LOCKOUT TAGOUT PROCEDURES

When a crew, department, or other group performs service or maintenance, all authorized workers shall apply their lockout/tagout device to a group lock box before they begin work, and shall remove them when work is stopped.

SHIFT OR PERSONNEL CHANGE

Lock keys must be transferred between off going and oncoming workers to ensure continuity of lockout/tagout procedures. This is done to ensure that all energy sources have been accurately locked out before beginning any servicing or maintenance activity.

OUTSIDE CONTRACTORS

Whenever outside contractors are working for South Central College this program shall cover their activities. The maintenance supervisors shall inform the contractor of the applicable lockout/tagout procedures. This individual shall inquire and learn of any lockout/tagout

procedures used by the contractor for his/her own equipment, the maintenance supervisor will then inform all affected workers of these procedures and ensure compliance.

ANNUAL AUDIT

An annual audit of compliance with this written program shall be conducted using the attached Periodic Review Form. This audit will contain the following elements:

1. The maintenance supervisors and/or Security & Safety Director or their designee will conduct the audit;
2. Corrections will be made based on the results and additional training conducted as necessary;
3. All responsibilities of the lockout/tagout program will be reviewed with all authorized employees where lockout/tagout is used for energy control.

The audit will identify the machine and/or equipment, date of inspection, employees included in the audit and the name of the auditor.

RESPONSIBILITIES

Each employee is required to abide by the terms of this program. In addition to the terms of this program the following employees have the responsibilities that are listed below:

Authorized Employees

- All equipment must be locked out whenever bypassing a guard or placing a body part in a machine danger zone. This rule applies whenever cleaning, adjusting or repairing a machine and/or equipment unless alternative measures are taken which provide protection against unintended activation of the machine and/or equipment.
- All employees must be trained on machine specific Lockout/Tagout procedures. The training must include having knowledge of the type and magnitude of the energy hazards to be controlled and the means to control the energy.
- Proper use and maintenance of locks and tags.
- Procedures to notify affected employees before a lockout/tagout occurs.
- Procedures for lockout/tagout of all machinery and equipment.
- Follow specific lockout/tagout procedures before the job task begins being certain that all stored energy is relieved, disconnected, or restrained.
- Perform all safety checks included in the specific procedures.
- Remove all tools from the machine and assure all guards are in place before re-energizing machine and/or equipment.
- Check area around machine or equipment to ensure area is clear before start up.
- Notify all affected employees before removing all locks and tags and before machine start up.
- Notify maintenance supervisors if a machine specific lockout/tagout procedure is incorrect or missing.

Affected Employees

- Attend training on the purpose and use of the Lockout/Tagout Program
- Do not apply or remove a lock or tag device
- Must stay clear of machinery and/or equipment, which are being serviced, cleaned, or adjusted by an authorized employee.

Maintenance Supervisors/Faculty with Lockout & tagout stations in their area

- Ensure that machines are capable of being lock out
- Ensure that machine controls and energy isolating devices are labeled
- Ensure that all personnel are trained on the lockout/tagout program
- Ensure that all authorized workers are issued locks and tags by the maintenance supervisors
- Review accuracy of lockout procedures and employee compliance.
- Ensure compliance with this program in their area. Take primary responsibility for other authorized employees working under the group lock/tagout
- Ensure that contractors submit their energy control procedures and inform and/or train their employees of these procedures

Security & Safety Director

- Assist faculty/staff to ensure lockout/tagout procedures are posted on or near machinery and/or equipment
- Provide or arrange training for all employees
- Ensure new employee and contractor training is conducted
- Authorize tagout only systems
- Conduct periodic observations to ensure compliance by workers and contractors
- Ensure that an annual audit of program is performed to determine effectiveness.

ENERGY CONTROL PROCEDURES FORM

Department: _____

Equipment: _____

Equipment Manufacturer: _____

Serial Number: _____

Contact Person: _____

Authorized Employee(s): _____

Purpose: This procedure establishes minimum requirements for the lockout of the machine whenever maintenance or service work is performed. The procedure is used to ensure that the machine is stopped, isolated from all potential hazardous energy sources, and locked out/tagged out before employees perform any servicing or maintenance.

Notify all affected employees before this lockout is used.				
Hazardous energy		Lockout steps	Verification steps	Return to service steps
Type	Magnitude			
Notify all affected employees that the maintenance is complete and the machine is available for use				



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PERIODIC REVIEW FORM

Lockout/Tagout Procedure

Machine/Equipment: _____

Procedure: _____ Date: _____

Inspector: _____

Authorized Person(s): _____

Change: **Yes** _____ **No** _____

If Yes, Explain: _____
