

**WARTBURG COLLEGE
ENVIRONMENTAL AND OCCUPATIONAL SAFETY PROGRAM**

Lockout / Tagout Plan

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General

Lockout/Tagout procedures are designed to provide safety guidance and instruction to employees working with energy sources. The goal is no injury to persons and no damage to equipment from accidental opened or energized electronic or mechanical equipment. This plan identifies the training requirements for all applicable personnel so that the proper lockout/tagout procedures are applied to all energy isolating devices when necessary. By following the correct procedures, personnel performing maintenance and repair work can be assured the equipment affected is safe to repair alter, clean, inspect, or disassemble.

Scope

This plan covers all employees, students, volunteers and contractors who may become involved with work on energized systems that might unexpectedly, improperly, or accidentally be energized and cause injury or property damage. Systems include, but are not necessarily limited to: electrical, steam, hydraulic, natural gas or compressed air or gas. Exceptions to this plan are new construction (safety responsibility falls to contractor), and cord and plug connected equipment which is unplugged and under exclusive control of the person performing the servicing or maintenance.

Responsibilities

The Director of Campus Security and Safety maintains the plan and distributes changes.

The Plant Superintendent trains employees, provides necessary equipment, and monitors activities to insure compliance.

Physical Plant employees follow the procedures in this plan, recommend any changes and stop any observed or known unsafe practices.

Procedures

Any time work is required on an energized source, lock and tag devices will be installed to preclude unauthorized operation of such source. Both the lock and tag devices will identify the individual that applied the devices. No one may remove another's lock and tag, or operate or override equipment that is "locked" and/or "tagged" out.

Notice: Any person who removes another person's lock and/or tag, except as allowed by this plan, attempts to operate, operates, or overrides equipment that is "locked and/or tagged" will be subject to disciplinary action up to termination of employment and/or criminal prosecution.

When multiple locks and tags are used, the individual responsible for servicing or repairing the equipment is to lock and tag first, i.e., the electrician first locks out the electrical system. The last individual to install locks and tags will be the last to remove their locks and tags.

The lockout device is under the exclusive control of the authorized person performing the work.

Locks used for locking out energy sources will be a "keyed" lock of a five tumbler design and have the personal identity affixed. Only that employee and the locksmith will have control of lockout locks.

No "keyed alike" locks will be used for a lockout.

Locks and tags used for this program will not be used for any other purpose.

Other locks and tags may be used to secure machinery or equipment, but can not be used when servicing or maintaining that equipment or machinery.

If the authorized or affected person is not available to remove their lock, only the plant superintendent, assistant plant superintendent in the absence of the plant superintendent, or safety officer may authorize the removal of locks and tags. This may be done only after every effort has been made to have the authorized person remove the devices.

In the event of hazardous materials and/or conditions which may involve potentially critical personnel exposure, the plant superintendent will review the situation and determine the appropriate "lockout" procedure.

Where feasible on all valves and piping systems, valves will be locked and blinds will be installed on both sides of the area being worked on.

All locks and tags will remain in place until the work is completed. An exception is allowed for testing and adjusting the equipment being serviced. Locks and tags are to be removed for this purpose and then immediately re-installed for further work.

Whenever outside servicing or contractor personnel are to be engaging in activities covered by the scope of this program, physical plant personnel and the contractor will coordinate with each other concerning their respective locking and tagging procedures. The plant superintendent will resolve any conflicts.

The plant superintendent will identify which equipment and machinery needs to be locked and/or tagged for servicing. Such list is at Appendix A and will be updated annually or when there are changes, additions, or deletions.

Specific Lockout/Tagout Procedures: The following procedures will be followed when servicing or maintaining energized equipment:

- Determine which personnel or activities will be affected if the energy source is improperly or accidentally energized or opened.
- If an energy-isolating device is not capable of being locked out, a tag only will be used and other positive means will be taken to ensure adequate protection for personnel working on the equipment.
- Notify all affected personnel that a lockout/tagout is going to be utilized.
- If the machine or equipment is operating, shut it down by the normal stopping method (depress stop button, open toggle switch, etc.)
- Operate the switch, valve, or other energy isolating device(s) so that the equipment is isolated from its energy source. Stored energy must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.
- Lockout and tagout the energy-isolating devices with assigned individual locks and tags.
- If more than one individual is working on a piece of equipment, EACH individual shall place their own personal lock and tag on the energy-isolating devices.
- After ensuring that no personnel are exposed, and as a check on having disconnected the energy sources, try the normal operating controls to make certain the equipment will not operate. (Caution: Return operating controls to “neutral” or “off” position after the test.)
- After servicing and/or maintenance have been completed and the equipment is ready for normal operations, check the area around the equipment to ensure that no one is exposed.
- After all tools have been removed from the equipment, guards have been re-installed (if applicable) and employees are in the clear, remove all lockout and tagout devices.
- As each person no longer needs to maintain their “lockout” protection, each person will remove their lock and tag from the energy-isolating device.
- Operate the energy-isolating devices to restore energy to the equipment.

Training

All personnel authorized to do maintenance and affected persons (those using or capable of starting a machine or any equipment) shall be trained annually on this procedure.

All new employees and applicable contractor personnel shall be properly trained on this procedure before working in an area where lockout or tagout is in use.

The plant superintendent or his representative must document that training has been accomplished. Copies of this documentation will be maintained in Physical Plant files. Documentation must include the names of all persons participating, the date of the training, a copy of the curriculum, and the name of the trainer.

To ensure that the necessary information has been learned a written test shall be administered by the trainer and the results recorded. Persons who do not achieve at least a 75% score on the written test must be retrained. All persons know the details of this procedure and that they know what to do and what not to do when they encounter a lock or a tag on a switch or a device they wish to operate. Quizzes are in Appendix 2 and 3.

Employees and contractors must be aware that a tag is not a physical restraint. They must be aware of the false sense of security that tagout systems can present.

Retraining should take place:

1. When a person is re-assigned to a different area or machine.
2. When there is a change in the tag and lockout procedure.
3. When there is a change in equipment or machinery.
4. When a periodic inspection or audit reveals inadequacies in the employee's or contractor's knowledge or use of lockout/tagout.

Reference

OSHA, 29 CFR section 1910.147 Control of Hazardous Energy
OSHA, 29 CFR section 1926.950(d), Power Transmission and Distribution
OSHA, 29 CFR section 1926.954, Grounding for Protection of Employees

Definitions

Affected Person - An employee or contractor who works in an area where servicing or maintenance operations are performed. An affected person does not perform servicing or maintenance on machines or equipment and, consequently, is not responsible for implementing lockout/tagout procedures. However, an authorized person and an affected person may be the same person when the affected person's duties also involve performing maintenance or service. An affected person becomes an authorized person whenever he or she performs servicing or maintenance functions.

Authorized person - An employee or contractor who performs servicing or maintenance on equipment and machinery. This person implements lockout/tagout procedures to guarantee his or her own protection.

Capability of being locked out - an energy-isolating device is considered capable of being locked out if it meets one of the following requirements:

1. It is designed with a hasp to which a lock can attached.
2. It is designed with any other integral part through which a lock can be affixed.
3. It has a locking mechanism built into it.
4. It can be locked without dismantling, rebuilding, or replacing the energy-isolating device or permanently altering its energy control capability.

Energized - Equipment and machinery is energized when they are connected to an energy source or contain residual or stored energy.

Energy Isolating Device - A mechanical device that physically prevents the transmission or release of energy.

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

Lockout - Placing a lock on an energy-isolating device according to an established procedure, that ensures that the fixture, equipment or machinery cannot be energized until the lock is removed by the person who placed it there.

Lockout Device - A device that utilizes a positive means such as a lock to hold an energy-isolating device in a safe position and prevent the energizing of fixtures, equipment or machinery.

Tagout - The placement of a tagout device on an energy-isolating device, according to an established procedure, clearly marked by means of a tag that states who has the fixture, equipment, or machinery shut down and that the equipment or machinery must not be operated until the tagout device is removed by the person who place it there.

Tagout Device - Any prominent warning device, such as a tag and a means of attachment, that can be securely fastened to an energy-isolating device according to established procedure. The tag indicates that the equipment or machinery to which it is attached must not be operated until the tagout device is removed according to the energy control procedure. The attachment method must be substantial and not easily removed.

Zero Energy State - All sources of energy have been controlled and/or dissipated

Lockout/Tagout Quiz for Affected Persons

Name: _____ Date: _____ Score: _____

Circle the Correct Answer

1. Lockout/tagout is a safety procedure mandated by:
A. The College Board of Regents
B. The College Safety Committee
C. OSHA
2. Outside contractors do not have to comply with the standard.
True or False
3. Lockout means:
A. Placing a notice on the power source to warn co-workers and others not to turn the power on.
B. Blocking the flow of energy from the power source to the equipment.
C. Making sure no one can enter your work area.
4. A tag provides the same level of physical protection as a lockout device.
True or False
5. Affected persons and others may remove a tag affixed by an authorized person when the need exists.
True or False
6. The information on a tag might include the name of the individual who put it there, the date and time the work began, and the type of work being performed.
True or False
7. Persons who are required to receive lockout/tagout training include:
A. Only those who operate and/or service equipment or machinery.
B. Those who operate and/or service equipment or machinery and their managers.
C. Anyone who may have reason to be in an area where energy control measures are used.
8. A simple repair, such as clearing a jam, doesn't require lockout/tagout.
True or False
9. If you see a tag which is illegible, you should
A. Ignore it.
B. Remove it.
C. Report it immediately
10. Only authorized persons are subject to review during periodic inspections.
True or False

Employee/contractor _____ Instructor _____

Lockout/Tagout Quiz for Authorized Persons

Name: _____ Date: _____ Score: _____

Circle the Correct Answer

1. Lockout means:
 - A. Placing a notice on the power source to warn co-workers and others not to turn the power on.
 - B. Blocking the flow of energy from the power source to the equipment.
 - C. Making sure no one can enter your work area.

2. The information on a tag might include the name of the worker who put it there, the date and time the work began, and the type of work being performed.
True or False

3. Lockout/Tagout rules must be followed:
 - A. Whenever you clean, repair, or service a machine.
 - B. Only when you have plenty of time.
 - C. If you feel it is necessary

4. If the circumstances warrant it, you can rely on a co-workers lock while you are doing routine maintenance on a machine.
True or False

5. The first step in lockout/tagout is to:
 - A. Tagout the disconnect point.
 - B. Turn off the equipment and disconnect the energy source.
 - C. Lockout the energy sources.

6. To lock out energy sources safely:
 - A. Pull the fuse or flip the circuit breaker
 - B. Close all valves completely and turn off all switches
 - C. Make it impossible for the flow of energy to be reestablished without your knowledge by attaching a lockout/tagout device.

7. Releasing residual energy may require you to discharge capacitors, ground circuits, bleed lines, or release built-up pressure:
True or False

8. Once you've released residual energy from a machine, its okay to start your repairs and maintenance.
True or False

9. If you should come across a closed valve or switch that has been turned off but doesn't have a lock, you should:
 - C. Ignore it.
 - D. Remove it.
 - E. Report it immediately

10. When you've completed working on a machine and you've removed your lock and tag, you can immediately start the machine.
True or False

Employee/associate _____ Instructor _____