

11.2.8 LOCKOUT / TAGOUT FOR ELECTRICAL & MECHANICAL EQUIPMENT

PURPOSE:

To ensure that all individuals on Baylor University campus are protected from accidental or unexpected activation of mechanical and/or electrical equipment during maintenance, repairing, cleaning, servicing, or adjusting of any machinery or equipment.

SCOPE:

It is the policy of Baylor University that any individual engaging in the maintenance, repairing, cleaning, servicing, or adjusting of any machinery or equipment on Baylor University property will abide by the procedures outlined in this document and specific procedures outlined in the Baylor University Risk Management Manual. These procedures are designed to meet or exceed applicable OSHA standards for safe work practices.

Lockout is a first means of protection; warning tags only supplement the use of locks. Tags alone may be used only when the application of a lock is not practically feasible and with approval of the appropriate supervisor.

A. Definitions

1. Lockout

The practice of using keyed or combination security devices ("locks") to prevent the unwanted activation of mechanical or electrical equipment.

2. Tagout

The practice of using tags in conjunction with locks to increase the visibility and awareness that equipment is not to be energized or activated until such devices are removed.

- a. Tagout devices will be of the non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds.

3. Activation/Energization

To set machinery into motion by starting, switching, pushing, moving, or otherwise engaging power sources for such equipment. To provide a flow of electricity or complete a circuit that is the main power source for the machinery/equipment.

4. Energy Control Procedures

Proper use of lockout/tagout equipment to ensure safe work practices.

5. Hazardous Motion

Motion of equipment under mechanical stress or gravity that may abruptly release and cause injury. Hazardous motion may result even after power sources are disconnected.

11.2.8 LOCKOUT / TAGOUT FOR ELECTRICAL & MECHANICAL EQUIPMENT

Examples are coiled springs, raised hydraulic equipment, and any sources of potential energy that may cause injury.

RESPONSIBILITY:

A. Department Of Risk Management & Baylor Facility Services

1. Ensure that the lockout/tagout procedures are in compliance with OSHA requirements.
2. Provide annual training to employees affected by lockout/tagout procedures.
3. Inspect energy control procedures and practices at least annually to ensure that general and specific lockout/tagout procedures are being followed.
 - a. Inspections must be carried out by persons other than those employees directly utilizing energy control procedures.
 - b. Inspections will include a review between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.
 - c. Certify that periodic inspections have been performed (see Recordkeeping and Appendix A, Lockout/Tagout Inspection Form)
4. Maintain a list of Baylor University equipment, machinery, and operations that require the use of lockout/tagout procedures. The file will include the location, description, power source, and primary hazards of equipment/ machinery, a list of the primary operators/maintenance personnel, and a list of lockout/tagout equipment that is used and maintained on site.

B. Deans, Directors, Department Heads

1. Ensure that each supervisor adheres to procedures.

C. Supervisors

1. Ensure that each employee and each off campus employee (contractors) engaging in work requiring locking/tagging out of energy sources understands and adheres to adopted procedures.
2. Assure that employees have received training in energy control procedures prior to operating the machinery or equipment.
3. Provide and maintain necessary equipment and resources, including accident prevention signs, tags, padlocks, seals and/or other similarly effective means.

11.2.8 LOCKOUT / TAGOUT FOR ELECTRICAL & MECHANICAL EQUIPMENT

4. Notify Baylor University Department of Risk Management and Baylor Facility Services of new or revised equipment, machinery, or operations that require the use of lockout/tagout devices during servicing, maintenance, or repair.

D. Employees

6. Adhere to Specific Procedures as outlined in this document for all tasks that require the use of lockout/tagout procedures as defined.
7. Maintain lockout/tagout supplies in maintenance vehicles.

E. Specific Procedures

1. Preparation for Lockout/Tagout

Make a survey to locate and identify all isolating devices to be certain which switch(es), valve(s), or other energy isolating devices apply to the equipment to be locked or tagged out. More than one energy source (electrical, mechanical, stored energy, or others) may be involved.

2. Sequence of Lockout or Tagout System Procedure

- a. Notify affected employees that a lockout or tagout system is going to be utilized and the reason therefore. The authorized employee shall know the type and magnitude of energy that the machine or equipment utilizes and shall understand the hazards thereof.
- b. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.).
- c. Operate the switch, valve, or other energy isolating device(s) so that the equipment is isolated from its energy source(s). Stored energy (such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.
- d. Lockout/Tagout the energy isolating devices with assigned individual lock(s) or tag(s).
- e. After ensuring that no personnel are exposed, and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate. CAUTION: Return operating control(s) to neutral or off position after the test.
- f. The equipment is now locked out or tagged out.

3. Restoring Machines or Equipment to Normal Operations

11.2.8 LOCKOUT / TAGOUT FOR ELECTRICAL & MECHANICAL EQUIPMENT

- a. After the servicing and/or maintenance are complete and equipment is ready for normal production operations, check the area around the machines or equipment to ensure that no one is exposed.
- b. After all tools have been removed from the machine or equipment, guards have been reinstalled, and employees are in the clear, remove all lockout or tagout devices. Operate the energy isolating devices to restore energy to the machine or equipment.

4. Procedure Involving More Than One Person

In the preceding steps, if more than one individual is required to lockout or tagout equipment, each shall place his/her own personal lockout/tagout device on the energy isolating device(s). When an energy isolating device cannot accept multiple locks or tags, a multiple lockout or tagout device (hasp) may be used. If lockout is used, a single lock may be used to lockout the machine or equipment with the key being placed in a lockout box or cabinet which allows the use of multiple locks to secure it. Each employee will then use his/her own lock to secure the box or cabinet. As each person no longer needs to maintain his/her lockout protection, that person will remove his/her lock from the box or cabinet.

5. Temporary Removal of Lockout/Tagout Devices

- a. In situations where lockout/tagout devices must be temporarily removed from the energy isolating device and the machine or equipment energized to test or position the machine, equipment or component thereof, the following sequence of actions will be followed:
 - (1) Remove non-essential items and ensure that machine or equipment components are operationally intact.
 - (2) Notify affected employees that lockout/tagout devices have been removed and ensure that all employees have been safely positioned or removed from the area.
 - (3) Have employees who applied the lockout/tagout devices remove the lockout/tagout devices.
 - (4) Energize and proceed with testing or positioning.
 - (5) De-energize all systems and reapply energy control measures in accordance with section E. 6. of these procedures.

6. Maintenance Requiring Undisrupted Energy Supply

- a. Where maintenance, repairing, cleaning, servicing, adjusting, or setting up operations cannot be accomplished with the prime mover or energy source disconnected, such operations may only be performed under the following conditions:

11.2.8 LOCKOUT / TAGOUT FOR ELECTRICAL & MECHANICAL EQUIPMENT

- (1) The operating station (e.g. external control panel) where the machine may be activated must at all times be under the control of a qualified operator.
- (2) All participants must be in clear view of the operator or in positive communication with each other.
- (3) All participants must be beyond the reach of machine elements which may move rapidly and present a hazard.
- (4) Where machine configuration or size requires that the operator leave the control station to install tools, and where there are machine elements which may move rapidly, if activated, such elements must be separately locked out.
- (5) During repair procedures where mechanical components are being adjusted or replaced, the machine shall be de-energized or disconnected from its power source.

F. Employee Training

Baylor University and Baylor Facility Services Employees who may be reasonably expected to use the equipment or procedures outlined in this document will receive annual lockout/tagout training from an appropriate member of the Baylor University Department of Risk Management, Baylor Facility Services, or another qualified trainer. Note: Training requirements outlined in 29CFR [Specifically 1910.147 (c)(7)(i),(ii), & (iii)].

G. Recordkeeping

1. Inspection Records

- a. The Baylor University Department of Risk Management and Baylor Facility Services will maintain inspection records in accordance with Section H of this document.
- b. The Baylor University Department of Risk Management and Baylor Facility Services will complete and maintain all Lockout/Tagout Inspection Forms.

H. Training Records

Training records will be maintained by the Baylor University Department of Risk Management and Baylor Facility Services. Training records will include an outline of topics covered and a sign in sheet of those employees attending.

I. Reference

Code of Federal Regulations, Title 29, Part 1910, Section 147.

11.2.8 LOCKOUT / TAGOUT FOR ELECTRICAL & MECHANICAL EQUIPMENT

APPENDIX A

BAYLOR UNIVERSITY LOCKOUT/TAGOUT INSPECTION FORM

1. Inspection Date: _____

2. Inspector (Printed Name/Signature): _____ / _____

3. Employee(s) Inspected (Printed/Signature): _____ / _____

_____ / _____

_____ / _____

_____ / _____

5. Machine/equipment on which the energy control procedure was being utilized:

Item	Yes	No
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Does employee(s) have access to adequate lockout/tagout devices?

Has employee tested the effectiveness of his/her lockout/tagout devices?

Has employee received CPR and lockout/tagout training in the last year?

If this is an outside contractor, has a BFS supervisor informed him/her of the necessity for adhering to these procedures?

Have all procedures been followed?

Were tags legible and clearly displayed?

11.2.8 LOCKOUT / TAGOUT FOR ELECTRICAL & MECHANICAL EQUIPMENT

6. Comments/Observations: _____

Formulated:

Reviewed:

Revised: 12/23/10

[Signature on File] _____

Warren A. Ricks, CRM
Chairman, Risk Management Committee
Assistant Vice President and Chief Risk Management Officer

Date

[Signature on File] _____

Charles D. Beckenhauer
General Counsel

Date

[Signature on File] _____

Dr. Reagan Ramsower
Vice President for Finance and Administration

Date