

TARLETON STATE UNIVERSITY
LOCKOUT/TAGOUT PROGRAM
CONTROL OF HAZARDOUS ENERGY SOURCES

Office of Risk Management and Safety
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1. GENERAL

The following information is provided to assist Tarleton State University departments in developing procedures to meet safety requirements for controlling hazardous energy using lockout/tagout techniques.

2. PURPOSE

This program establishes recommended minimum requirements for the lockout/tagout of energy isolating devices. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before energization (*start-up of the machinery or equipment*) or release of stored energy that could cause injury.

When the energy isolating devices are not lockable, tagout may be used provided additional training and more rigorous periodic inspections are accomplished. Under the use of a tagout system, full employee protection must be achieved. For complex systems, more comprehensive procedures may need to be developed, documented, and utilized.

3. SCOPE

Affected departments of Tarleton are expected to establish a program for the control of hazardous energy. An energy control program shall consist of energy control procedures, employee training, and periodic inspections.

4. RESPONSIBILITIES

- a. The Tarleton Department of Risk Management and Safety will:
 - i. assist with training as appropriate
 - ii. monitor program compliance
- b. The department /supervisor will:
 - i. provide appropriate lockout/tagout training for affected employees
 - ii. provide necessary equipment for the program
 - iii. conduct periodic inspections to assure program compliance
- c. The employee will:
 - i. comply with the restrictions and limitations during use of lockout/tagout
 - ii. perform the lockout/tagout in accordance with established procedures

5. DEFINITIONS

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

- b. **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.
- c. **Tagout device** - A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to 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.
- d. **Affected employee** – An employee whose job requires operation or use of machinery or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires them to work in an area in which such servicing or maintenance is being performed.
- e. **Authorized employee** - A person who locks out or tags out machines or equipment in order to perform servicing of maintenance on that machine or equipment. An **affected employee** becomes an authorized employee when that employee’s duties include performing servicing or maintenance covered under this section.
- f. **Energized** – Connected to an energy source or containing residual or stored energy.
- g. **Energy source** – Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy.
- h. **Energy isolating device** - A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: a manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of circuit can be disconnected from all ungrounded supply conductors and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.
- i. **Lockout** - The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

6. PROGRAM REQUIREMENTS

- a. Sequence of Lockout
 - i. Notify all affected employees that servicing or maintenance is required on a machine or equipment and that the machine or

equipment must be shut down and locked out to perform the servicing or maintenance.

- ii. The authorized employee shall use established procedures to identify the type and magnitude of the energy that the machine or equipment utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.
- iii. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop, open switch, close valve, etc.).
- iv. De-activate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).
- v. Lockout the energy isolating device(s) with assigned individual lock(s).
- vi. Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, air, gas, steam, or water pressure, etc.) shall be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.
- vii. Ensure that the equipment is disconnected from the energy source(s) by
 1. first, checking that no personnel are exposed,
 2. second, verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate.
- viii. The machine or equipment is now locked out.

CAUTION: Return operating control(s) to neutral or “off” position after verifying the isolation of the equipment.

b. Restoring Equipment to Service

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken:

- i. Check the machine or equipment and the immediate area around the machine or equipment to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
- ii. Check the work area to ensure that all employees have been safely positioned or removed from the area.
- iii. Verify that the controls are in neutral.
- iv. Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.
- v. Remove the lockout devices and re-energize the machine or equipment.

CAUTION: The removal of some forms of blocking may require re-energization of the machine before safe removal.

7. FULL EMPLOYEE PROTECTION (Tagout Procedures)

- a. If an energy isolating device (lockout) is not capable of being locked out, then a tagout system will be used to provide full employee protection.
- b. When a tagout device is used on an energy-isolating device capable of being locked out, the tagout device shall be attached at the same location that the lockout device would have been attached, and the tagout program will provide a level of safety equivalent to that obtained by using a lockout program.
- c. In demonstrating that a level of safety is achieved in the tagout program which is equivalent to the level of safety obtained by using a lockout program, all tagout-related provisions shall be demonstrated.
- d. Additional means to be considered as part of the tagout demonstration shall include the implementation of additional safety measures such as:
 - i. removal of an isolating circuit element
 - ii. blocking of a controlling switch
 - iii. opening of an extra disconnecting device
 - iv. removal of a valve handle to reduce the likelihood of inadvertent energization

8. EXEMPTION

The Hazardous Energy Control program does not apply to work on cord and plug connected electrical equipment when the employee performing the service or maintenance has exclusive control of the plug. Before service or maintenance is performed on this type of equipment it must be unplugged from the energy source.

9. TRAINING AND COMMUNICATION

Applicable departments shall provide training to their employees to ensure that the purpose and function of the hazardous energy control program are understood and that the knowledge and skills required for the safe application, use and removal of the energy controls are acquired. The training program shall include the following:

- a. Each authorized employee shall receive training in the recognition of:
 - i. hazardous energy sources
 - ii. type and magnitude of the energy available in the workplace
 - iii. the methods necessary for energy isolation and control
- b. Each affected employee shall be instructed in the purpose and use of the hazardous energy control program.
- c. Employees shall be informed about the program requirements at initial hire and periodically thereafter.

- d. Retraining shall be provided for employees whenever a change in their job assignments, a change in machines, equipment or processes present a new hazard, or when there is a change in the energy control procedures.
- e. Additional retraining shall also be conducted whenever a periodic inspection reveals or whenever the department has reason to believe that there are deviations from or inadequacies in administrative practices or the employee's knowledge or use of the energy control procedures.
- f. The retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.
- g. All other employees whose work operations are or may be in an area where energy control procedures may be used, shall have instruction on the energy control program. Additionally, these employees shall be informed about NOT attempting to restart or re-energize machines or equipment which are locked out or tagged out.

10. PERIODIC INSPECTIONS

Applicable departments will conduct periodic inspections to assure program compliance. Additionally, the Office of Risk Management and Safety will conduct periodic reviews of the TSU Hazardous Energy Control Program to ensure that the procedures and the requirements of the standard are being followed.

REFERENCE

Refer to the most recent version of the Occupational Safety and Health Standard – 29 CFR 1910.147, “Control of Hazardous Energy (lockout/tagout).”