

THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

Program Statement

The University of North Alabama will take measures to insure that employees are aware of the dangers associated with stored energy and will provide procedures for identifying potential energy sources and the means by which the equipment should be deenergized in order to prevent injury to employees.

Program Objective

The purpose of this program is to protect the operator who provides maintenance or service from unexpected equipment energization or release of stored energy.

Scope and Application

This procedure applies to the control of energy while machines are being serviced or repaired. It does not apply to the following:

Work on cord and plug equipment in which energizing is totally controlled by unplugging of the equipment and when the cord and plug are under the exclusive control of the person providing the service.

Energy Control Procedures

Supervisors should identify equipment that may expose University's personnel to hazardous energy sources during maintenance. Specific procedures for energy control should be designed for the identified equipment.

Energy Sources

Hazardous energy sources that may require control are:

- Electrical Energy
- Pneumatic pressure
- Hydraulic pressure
- Vacuum lines
- High or low temperature
- Reactive chemicals
- Springs or other resilient elements under stress
- Radioactive sources
- Non-ionizing radiation such as lasers, infrared radiation, ultra violet radiation, ultra sound. Vibration, noise, etc.

Lockout-tagout and any other energy control procedures shall be applied by authorized personnel only. Authorization must be obtained from the area supervisor before any service or maintenance work begins.

Affected employees should be notified of the ongoing procedures.

The following steps can be followed to develop specific energy control procedures:

Preparation for shutdown

Before turning the equipment off, familiarize with manufacturer's instructions for equipment shutdown. Know all the energy sources involved, their hazards, and the control procedures that should be applied.

Ensure that all the devices you need for energy control are readily available at the work area.

Notify all affected employees of equipment shut down and that all applied energy control devices should not be removed.

Machine or equipment shutdown

Follow standard procedures for shut down. Keep personnel not involved in maintenance or service away from the area.

Machine or equipment isolation

Apply all isolating devices needed for energy control. When using locks, tags shall be affixed at the same point of application. Lockout devices shall keep the isolating device in the "safe" or "off" position. Incoming pipes with hazardous materials or fluids at high temperature or pressure shall be isolated by using blind flanges, double block and bleed methods or any other equally effective procedure.

Stored energy relief

All residual energy shall be eliminated or rendered safe. If there is a chance for energy buildup, this source shall be eliminated by isolation or continuous discharge. Eliminate hydraulic or pneumatic pressure. Use bonding and grounding to eliminate static electricity. Discharge any residual electrical charge from condensers and capacitors. Block sources with stored mechanical energy such as compressed springs or elevated platforms to prevent unexpected movement.

Verification of isolation

After a machine has been isolated, locks-tags have been applied, and stored energy has been relieved, verify isolation and de-energizing by turning the machine on.

Release from Lockout Tagout

Before locks, tags and other isolating devices are removed, the following steps shall be taken:

Ensure that equipment components are operationally intact, and all removed items have been properly returned.

Check that employees are standing at safe distances from the equipment in case it fails during its return to operation.

Lockout, tagout and any other isolating devices shall be removed by the employee who installed them. If for well-established and known reasons this employee is not available, then a designated employee under the direct supervision of the supervisor may remove them. Standard procedures according to the energy control program must be followed.

Additional requirements:

If a locks and tags are temporarily removed for equipment testing or positioning, the following measures should be considered:

Clear all tools away from the machine or piece of equipment.

Remove employees from the area around the machine.

Remove the lock or tag.

Energize the machine and begin testing.

De-energize all systems and then re-apply all energy control measures.

Outside or Contract Personnel:

Outside personnel should be advised of the hazardous energy sources involved in their work and be requested to have their own control procedures.

General Requirements For The Selection Of Energy Control Devices:

The following devices can be used for energy control: locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware.

Lockout and tagout devices cannot be used for any other purposes than energy isolation and control.

They should be durable and able to stand up to environmental conditions of exposure. Tags should be replaced when they become illegible.

The lockout and tagout devices should be standardized in at least one of the following aspects: color; shape; or size. Tag format should also be standardized.

Lockout and tagout devices should not be removed when applying an unlocking strength of less than fifty pounds.

Tagout devices should identify the person who applied it. They should also have a warning message preventing their removal or equipment energizing.

Periodic Inspections:

The responsible supervisor must conduct inspections at least once every year to make sure that the energy control procedures are being followed and effectively protect personnel from hazardous energy sources.

Training And Communication:

Training is required to ensure that personnel understand the energy control program, and the prescribed standard operating procedures.

Training activities should be documented, including content of the training, personnel's names and dates of training.

Retraining should be provided whenever there is a change in job assignments, or standard procedures. It should also be provided when new hazards are present or when a deficiency in following standard procedures is noticed.