

YOUNGSTOWN STATE UNIVERSITY

Energy Control Program

Reviewed June 2009

Introduction

On September 1, 1989, the Occupational Safety and Health Administration (OSHA) issued its final rule concerning the control of hazardous energy in the workplace. This rule became codified into law in the Federal Register as 29 CFR §1910.147 and is entitled The Control Of Hazardous Energy (Lockout Tagout). The provisions of this standard, which went into effect on January 2, 1990, were designed to help safeguard employees from the unexpected release of hazardous energy during equipment maintenance and repair.

This program was developed specifically for Youngstown State University (YSU) in its attempt to protect employees from hazards associated with the release of stored energy during equipment maintenance and servicing. It addresses policies and procedures of Youngstown State University for administering a Lockout Tagout Program as required by law for the protection of all employees from the dangers associated with the release of stored hazardous energy.

1.0 Purpose

The purpose of this lockout tagout program is to prevent injuries to University employees by establishing policies and procedures which identify the appropriate energy isolating devices to be affixed to a machine or piece of equipment during routine service and/or maintenance. Employees shall adhere to the provisions of this program to ensure a machine or piece of equipment is isolated from all potentially hazardous energy and locked out and/or tagged out prior to an employee performing any service or maintenance where the unexpected energizing, start up or release of stored energy could cause injury.

2.0 Scope

This program shall apply to all employees of Youngstown State University whose job requires them to perform service and/or maintenance procedures on University machines and equipment capable of storing energy. Contract personnel working at all University owned properties shall have their own Lockout Tagout Program established prior to beginning work on campus and are to be made aware of the provisions of YSU's Lockout Tagout Program.

3.0 Policy Statement

It is the intention of Youngstown State University to comply with the Public Employees Risk Reduction Act (PERRA) by implementing a program for the control of hazardous energy (lockout/tagout) as described in 29 CFR §1910.147. In our attempt to comply with PERRA, it is our policy to establish protocols and procedures which will assure worker safety by adopting acceptable standards which will:

- 3.1 Identify all sources of potential stores energy which include but are not limited to electrical, mechanical, hydraulic, pneumatic, chemical and thermal in nature within our facilities.
- 3.2 Provide employees with the proper equipment to implement a lockout/tagout procedure which includes but it not limited to locks, energy isolation devices and tags.
- 3.3 Develop lockout and/or tagout procedures for machines and equipment indentified as having the capacity of storing potential energy.
- 3.4 Implement a training program for employees who will be required to perform service and/or maintenance on equipment which possess the potential to release stored energy as identified in YSU's Lockout/Tagout Program.
- 3.5 Conduct periodic inspections of the facility to determine program performance.

4.0 Program Responsibility

It is understood the administration has the ultimate responsibility for the identification of machinery and equipment possessing stored potential energy in and on facilities operated by Youngstown State University. The administration assumes the responsibility for developing a written Lockout Tagout Program which includes the following elements.

- 4.1 A survey of the workplace to identify all machinery and equipment which possess stored potential energy or may be subject to unexpected energizing.

- 4.2 Providing all authorized personnel with properly functioning locks with keys.
- 4.3 Instructing workers to check to ensure no other student or other employee is operating machinery or a piece of equipment prior to de-energizing it.
- 4.4 Steam, air and/or hydraulic lines are bled, drained and cleared out so that no pressure exists in these lines or in reservoir tanks.
- 4.5 Releasing and blocking the tension or pressure (e.g., springs) or any mechanism.
- 4.6 Requiring each employee whose job it is to perform service and/or maintenance on a specified piece of machinery to place a lock on that machine's lockout device(s). Each lock shall remain on the machine until that worker's job is complete.
- 4.7 All energy sources which could activate during servicing of a machine shall be locked/tagged out.
- 4.8 Testing of the main valve or main electrical disconnect to ensure the machine's power is truly deactivated.
- 4.9 Checking all electrical circuits with properly calibrated electrical testing equipment and safely discharging stored energy in electrical capacitors.
- 4.10 Support of all machinery possessing a ram, such as a power press, with safety blocks or pins to prevent the ram from falling.

5.0 Application

This program is applicable to service and maintenance work performed on any equipment and/or machine capable of storing and/or releasing energy. Lockout Tagout procedures are not required for normal machine operation unless:

- An employee is required to bypass a guard or other safety device present or
- An employee is required to place any part of his or her body into an area on a machine or piece of equipment where work is actually being performed or
- Where an associated danger zone exists during a machine's operating cycle.

This program does not apply to work on electrical equipment connected by a cord and plug where exposure to the hazard of unexpected energizing or start up is controlled solely by unplugging the equipment from its energy source and the plug is under the exclusive control of the employee performing the service or maintenance.

This program also excludes hot tap operations involving the transmission and distribution systems for gas, steam, water or petroleum products when they are performed on pressurized lines where continuity of service is essential, shutting down the service is impractical and employees are provided with an alternative form of protection that is equally effective.

6.0 Definitions

- 6.1 Affected Employee - Any University employee whose job requires him or her to operate or use equipment or machines on which service and/or maintenance is being performed under the Lockout Tagout Program or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.
- 6.2 Authorized Employee - Any University employee or person who has been authorized to remove from service or shut down (using the Lockout Tagout procedures established in this program) machines or equipment in order to perform servicing and/or maintenance.
- 6.3 Capable of Being Locked Out - Applied to an energy isolating device that has a hasp or other means of attachment to which or through which, a lock can be affixed or it has a locking mechanism built into it.
- 6.4 Energized - Any machine or piece of equipment that is connected to an energy source or contains residual or stored energy.
- 6.5 Energy Isolative 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 a circuit can be disconnected from all underground supply connectors and, in addition, no pole can be operated independently.
 - A line valve
 - A block
 - Any similar devices used to block or isolate energy
 - Push buttons, selector switches and other control circuit type devices are not energy isolating devices.
- 6.6 Energy Source - Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy.
- 6.7 Hot Tap - Procedure used in repair maintenance and service activities which involves welding on a piece of equipment (pipelines, vessels or tanks) that is under pressure.
- 6.8 Lockout - Placement of a lockout device on an energy isolating device in accordance with an established procedure ensuring the energy isolating device and the equipment being controlled cannot operate until the lockout device is removed.

- 6.9 Lockout Device - Any device that uses a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevents the energizing of a machine or equipment. The use of blank flanges and bolted slip blinds are considered using positive means.
- 6.10 Normal Production Operations - The use of a machine or equipment to perform its intended production function.
- 6.11 Servicing and/or Maintenance - Activities such as constructing, installing, setting up, adjusting, modifying and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machine or equipment and making adjustments or tool changes, where a University employee may be exposed to the unexpected energization or startup of the equipment or release of stored energy.
- 6.12 Tagout - Placement of a tagout device on an energy isolating device in accordance with an established procedure to indicate the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.
- 6.13 Tagout Device = Prominent warning device such as a tag that can be securely attached to the energy isolating device which identifies the employee who is performing the servicing and/or maintenance activities and the date(s) the activities are to be performed and also indicates the fact that the machine or piece of equipment may not be operated until the tagout device is removed by an authorized employee.

7.0 Energy Source Evaluation

All University machinery and equipment shall be evaluated using the criteria for possessing stored potential energy or being subjected to accidental energization. Such machinery and equipment shall be listed on an official Energy Source Evaluation Form.

8.0 Energy Control Procedures

Specific procedures for each machine and/or piece of equipment shall be developed and established which dictate how the respective machinery and/or equipment is to be isolated from its potential energy source. In addition, general procedures shall be assigned to machinery and/or equipment providing such machinery and/or pieces of equipment meet the following criteria.

- The machine and/or equipment has no potential for stored energy or a re-accumulation of stores energy after shut down.
- The machine and/or piece of equipment has a single energy source which can be readily identified and isolated.
- The isolation and locking out of the energy source will completely de-energize the machine and/or piece of equipment.
- The machine and/or piece of equipment is isolated from the energy source during service and/or maintenance.

- A single lockout device will achieve a locked-out condition
- The lockout device is under the exclusive control of the authorized employee performing the service and/or maintenance
- Servicing and/or maintenance does not create hazards for other employees
- No accidents have occurred involving the unexpected activation of the machine and/or piece of equipment during service and/or maintenance.

9.0 Locks and other Lockout Equipment

9.1 Locks - Each authorized employee will be issued two (2) locks and keys to each lock. Each lock will have its own unique key (no master key will be available) which must be kept in the possession of the employee to which it was issued at all times. A duplicate key to each lock will be kept in the office of the Maintenance Supervisor in a lock-box that is under his/her control at all times. Under no circumstances will any individual lock be removed by anyone except the owner of the lock unless procedures for Overriding Lockout System (Section 9.2) are followed.

9.2 Overriding Lockout System - If for any reason the individual who initiated a lockout is unable to re-energize the system, the Maintenance Supervisor may use the lockbox key to override the lockout and become the person who is responsible for re-energizing the system. Only in extreme emergencies where the employee responsible for initiating the lockout is not available or able to remove the lockout will the Maintenance Supervisor use the spare key to override the system. Circumstances that would entail overriding the system would include but not be limited to the following.

- Initiating employee became ill and was not able to re-energize the system
- Initiating employee left the area and was not able to be contacted and the situation required immediate re-energizing of the system.
- Initiating employee went home and was not able to be contacted.

Whenever the Maintenance Supervisor overrides an employee's lockout, the initiating employee must be notified and informed that his/her lockout has been overridden as soon as it is possible.

9.3 Lost Keys - If for any reason an employee's key becomes lost or inaccessible so that he/she is not able to re-energize the system, the employee will notify the Maintenance Supervisor.

The Maintenance Supervisor will, using his/her discretion, decide whether to issue the employee the duplicate key to remove the lockout device.

If the Maintenance Supervisor authorizes the employee to remove the lockout using the duplicate key, the employee must sign the key out and return it to the Maintenance Supervisor before the end of the shift. Under no circumstances may duplicate keys ever be taken from the worksite.

If an employee's key becomes lost or stolen and is not able to be recovered, he/she will be issued a new lock and the old lock will be taken out of service and not used for procedures involving lockout of energy sources under this program.

10.0 Lockout Kits

Lockout Kits will be assigned to each authorized employee and will become her/her responsibility. Each kit will contain the following materials for use in energy isolating procedures.

- Two (2) Steel Locks with separate key for each lock
- Two (2) Laminated Lockout Tags
- One (1) Large Valve Lockout Cover
- One (1) Small Valve Lockout Cover
- One (1) Ball Valve Lockout Cover
- One (1) Plug Lockout Device
- Two (2) Nylon cables for fastening lockout tags
- One (1) Wall Switch Lockout Device
- Two (2) Single Pole Breaker Lockouts
- One (1) Double Pole Breaker Lockout
- One (1) Three (3) foot length of chain

These kits are the responsibility of each employee. Should individual pieces of the kit become lost or defective, they should be replaced immediately by contacting the Maintenance Supervisor.

11.0 Training of Authorized Employees

All individuals designated as authorized personnel under this program will complete a training program specifically designed to provide information relative to the lockout procedures they are expected to follow. No employee will be permitted to become authorized under this program until initial training has been completed.

In addition, the training will review all sections of 29 CFR §1910.147.

12.0 Instruction of Affected Employees

All employees who work in an area where a lockout is in effect will be properly instructed prior to the lockout about procedures and prohibition or removing a lockout or trying to re-energize equipment that has been locked out.

13.0 Program Review

This program will be reviewed by the Safety Officer and the Maintenance Supervisor on an annual basis.