



# ENVIRONMENTAL & OCCUPATIONAL HEALTH & SAFETY

## Programs & Policies —

### *LOCKOUT TAGOUT PROGRAM*

## PURPOSE and SCOPE

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

This program applies to all employees of Youngstown State University whose job requires them to perform service and/or maintenance on University machines and equipment. Contract personnel working at all YSU 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.

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.

## DEFINITIONS

**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.



**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.

**ENERGIZED** - Any machine or piece of equipment that is connected to an energy source or contains residual or stored energy.

**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.\*\*\*

**ENERGY SOURCE** - Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy.

**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.

**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.

**LOCKOUT DEVICE** - Any device that uses a positive means such as a lock, 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.

**NORMAL PRODUCTION OPERATIONS** - The use of a machine or equipment to perform its intended production function.

**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.

**TAG** - Identification device that can be securely attached to the isolation lockout device which identifies the lockbox the lock is associated with.



## **RESPONSIBILITY**

### **EOHS DEPARTMENT**

1. 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.
2. Conduct periodic inspections of the facility to determine program performance.
3. Provide supervisors with the proper equipment to implement a lockout/tagout procedure which includes but it not limited to locks and tags.
4. Provide all authorized personnel with personal lock(s) and key(s)
5. Survey the workplace to identify all machinery and equipment which possess hazardous energy or may be subject to unexpected energizing.

### **SUPERVISOR/DEPARTMENT CHAIR**

1. Identify all sources of potential stored energy which includes but are not limited to electrical, mechanical, hydraulic, pneumatic, chemical and thermal in nature within our facilities.
2. Develop equipment specific isolation procedures for machines and equipment in their areas.
3. Instruct workers to check to ensure no other student or other employee is operating machinery or a piece or equipment prior to de-energizing it.
4. Require each employee whose job it is to perform service and/or maintenance on a specified piece of machinery to follow all aspects of this program.

### **AUTHORIZED EMPLOYEE**

1. Steam, air and/or hydraulic lines are bled, drained and cleared out so that no pressure exists in these lines or in reservoir tanks.
2. Releasing and blocking the tension or pressure (e.g., springs) or any mechanism.
3. All energy sources which could activate during servicing of a machine shall be locked/tagged out.
4. Testing of the main valve or main electrical disconnect to ensure the machine's power is truly deactivated.
5. Checking all electrical circuits with properly calibrated electrical testing equipment and safely discharging stored energy in electrical capacitors.
6. Support of all machinery possessing a ram, such as a power press, with safety blocks or pins to prevent the ram from falling.

## **PROCEDURE**

### **A. HAZARDOUS ENERGY EVALUATION**

All University machinery and equipment will be evaluated to determine if the release of hazardous energy may be present during servicing or maintenance activities. Machinery and equipment that meet this criteria will have equipment specific energy isolation procedures developed.



## **B. EQUIPMENT ISOLATION**

Any equipment that meets the scope of this program must be turned off and completely isolated from all energy sources before servicing and/or maintenance begins. Depending on the equipment and the scope of work, there may be different isolation points and procedures needed.

If a piece of equipment has a single isolation point, the authorized employee must de-energize the equipment and place their personal lockout lock onto the isolation device.

If a piece of equipment has more than one isolation point then a group lockout box must be used.

Tags must be attached to each isolation lockout device to identify the lockbox number it is associate with.

## **C. ENERGY ISOLATION PROCEDURES (EIP)**

Specific energy isolation procedures (EIP) for each machine and/or piece of equipment must be developed which describe how the machinery and/or equipment is to be isolated from its hazardous energy sources. EXCEPTION: If the machine and/or equipment has only 1 energy source a written EIP is not required.

Appendix 1, Energy Isolation Procedure must be completed and kept at the piece of equipment while the servicing and maintenance is performed. Once the work is complete, the EIP must be kept on file by the Authorized Employees Maintenance Supervisor for annual review. EIPS will be discarded after annual review.

For equipment that has multiple energy isolation devices, a Group Lockout Box will be established in accordance with this plan.

## **D. GROUP LOCKOUT BOX**

If a piece of equipment has multiple energy isolation points a group lockbox must be used.

- The authorized employee will follow the EIP for that equipment and place the isolation locks on each energy isolation device associated with the maintenance/serving work to be performed.
- The keys to the isolation locks will be placed into a group lockout box that will be located at the piece of equipment along with the completed EIP.
- Each isolation lock must have a tag on it to identify the lockbox number it is associated with.
- Once the verification of de-energization is complete (by the authorized employee) they must hang a craft lock on the group lockout box.
- Once the craft lock is placed on the box the authorized employee must sign the EIP.
- Any additional crafts must verify de-energization, place a craft lock on the box, and sign the EIP.
- Each authorized employee actively working on the equipment must place their personal lock on the lockbox before beginning work.
- When the employee stops working on the job they must remove their personal lock.
- The isolation locks, lock box, and craft lock will remain intact until the completion of the job.



## E. LOCKOUT EQUIPMENT

**Craft Lock** - color-coded lock issued to each facilities craft to use on group lockboxes. The locks will be keyed alike.

Building Maintenance - **GREEN**

Electricians - **YELLOW**

Boiler Tech/Plumber - **BLUE**

**Isolation Lock** - **RED** lockout lock placed on the equipment energy isolation device. The locks will have a unique key and a unique number.

**Personal Lock** - Each authorized employee will be issued 1 **ORANGE** lock and key. Each lock will have its own unique ID number and 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. The EOHS Department maintains the Unique ID number personnel assignment masterlist. Under no circumstances will any individual lock be removed by anyone except the owner of the lock unless procedures for Removing a Personal Lock (Section F) are followed.

**Group Lockbox Kits** - will be assigned to each facilities craft supervisor to use for group lockouts. The supervisor is responsible to maintain each kit as issued; if items are lost contact the EOHS department for replacement.

## F. REMOVING PERSONAL LOCK

- If for any reason the individual who installed the isolation locks and/or craft lock is unable to remove the lockout, the Maintenance Supervisor may use the craft lock key to access the isolation keys and remove the lockout.
- Only in extreme cases where the employee is not available or able to remove their personal lock will the Maintenance Supervisor cut the lock.
- The supervisor must first try to contact the employee and have them remove the lock. If the employee has left campus, they must return to campus to remove their lock (if able).
- If the supervisor is not able to verbally contact the employee, they must physically verify the employee is not working on the equipment/system.
- Once the supervisor has attempted to contact the employee and also verified the employee is not working on the equipment, they may cut the employees personal lock.
- The supervisor must complete the Personal Lock Removal Form and have the employee immediately review and sign the form upon their return to campus. (Appendix 2)
- The employee must bring the completed form to the EOHS department and be issued a new personal lock.

## G. LOST KEYS

- If for any reason an employee's key becomes lost or inaccessible so that he/she is not able to remove the lock, the employee will notify their supervisor.
- The supervisor is allowed to cut the employees personal lock by following section F Removing a Personal Lock.



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

No employee will be permitted to become authorized under this program until initial training has been completed.

Refresher training will be provided as needed and in the following situations:

- Violation of the program by authorized employees or maintenance supervisors
- Changes to the program
- Injury due to inadequate energy isolation

## **I. PROGRAM REVIEW**

This program will be reviewed by the EOHS Department and the Maintenance Supervisor(s) on an annual basis.

Reviewed 3/17/23

