

MINNESOTA STATE UNIVERSITY MOORHEAD
Environmental Health and Safety

Control of Hazardous Energy Sources
Lockout/Tagout Program

Purpose:

The Lockout/Tagout (LO/TO) program establishes safe work practices to prevent injury from the unexpected start-up or release of stored energy that could cause an injury during maintenance on machinery or equipment.

Policy:

That all forms of energy sources associated with the equipment that is receiving maintenance or service work is disabled before work begins. Employees authorized to use lockout/tagout procedures will be trained initially and when equipment changes occur.

Scope:

Lockout/tagout (LO/TO) will be required whenever there is a possibility of exposure to hazardous energy when performing maintenance or service work on machines or equipment.

Required LO/TO:

- Examples of stored energy where Lockout/Tagout applies are electrical, mechanical, thermal, steam, chemical, acids & caustics, explosives, natural gas, hydraulic, pneumatic, and gravity
- Maintenance or service work is defined as: constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities may also include lubrication, cleaning, unjamming, or tool changes, where an employee may be exposed to the unexpected energization or start-up of the equipment or release of hazardous energy
- Before removal or bypassing any guard or other safety device
- When an employee is required to place any part of body into a "point of operation" or other danger zone that exists during a machine operation cycle

Exceptions to LO/TO:

- Normal production activities in which lockout can't be feasibly conducted because the nature of the operation, or if the operation is routine, repetitive, and integral to the use of the equipment for production. This normal production work must be performed using alternative measures that provide effective protection
- Cord and plug type of equipment (operator has "control" of the plug)
- Hot tap operations

Responsibilities

Employee Responsibilities

Authorized Employees-Those who will perform LO/TO

- Understanding the purpose of LO/TO and the hazards of unexpected energization of equipment
- Will apply LO/TO devices when servicing or maintaining equipment
- Report any hazards or unsafe situations to supervisor/lead electrician

Affected Employees-Employees in area of LO/TO

- Affected employees include operators and other employees working near equipment that will be locked out
- Understanding the importance of LO/TO and the importance of not attempting to remove a LO/TO device
- Report any hazards or unsafe situations to supervisor/lead electrician

Supervisors/Lead Electrician Responsibilities

- Knowledge of LO/TO procedures
- Enforcement of LO/TO program
- Issue LO/TO devices
- Recognition when retraining is needed
- Development of specific lockout procedures
- Provide employees with the necessary lockout/tagout devices

Environmental Health and Safety Responsibilities

- Develop and maintain the Lockout/Tagout written program
- Develop and provide employee training
- Conduct periodic inspections to verify compliance with procedures
- Maintains training records

Approved Lockout/Tagout Devices

Specific lockout locks will be issued to all authorized employees

- Locks will be standardized, approved, and supplied by the University
- Only one key will be given with the lock. The lock owner must maintain the key
- Each lock will be identified with the authorized employee's name or another form of identification specific to the authorized employee
- A record of all assigned locks will be kept in the lead electrician's office
- The duplication of keys is strictly prohibited
- Locks will not be used for any other purpose than lockout

- Multiple lock adapters will be available for all jobs requiring more than one lock
- Use tagout devices if it isn't possible to lockout the machine or equipment

General Lockout Procedure

- Employee Notification: Notify all affected employees that a lockout or tagout system is going to be utilized and the reason for LO/TO
- Preparation: Locate all energy sources that need to be isolated
- Equipment Shutdown: If the equipment is operating, shut it down by the normal stopping procedure. Equipment operator will be contacted for shutdown procedures
Note: Do not use the electrical disconnect switch to stop the equipment
- Equipment Isolation: Use energy isolating devices to isolate the machine or equipment from all energy sources
- Application of Lockout/Tagout Device: Place assigned lock and/or tag to disconnect switch, valve, or another locking device
 - If a maintenance "crew" will be conducting service or repair, a "group lockout" procedure shall be followed:
 - Supervisor/Lead will assume responsibility or assign responsibility for group LO
 - The "responsible" person will follow equipment LO procedure and install a group lockout device
 - Each employee involved in servicing will install their personal lock and remove their lock when their work has been completed. (This includes the "responsible" person installing the group lock.)
 - The group lock will remain on equipment throughout repair and can only be removed by the "responsible" individual
 - Tags will only be allowed when it is not possible to utilize a lockout device. The lead electrician must approve the procedure
- "Test Start": After ensuring that no workers are in a danger zone, and energy sources are disconnected, equipment must be test started to verify that energy is at the zero state.
- Proceed with servicing or maintenance work
- Release from lockout or tagout: All potentially hazardous stored or residual energy must be relieved, disconnected, restrained, or otherwise made safe
 - Inspection: Make certain the work is completed and all tools and equipment have been removed
 - Check Controls: All controls should be in neutral or safest position and guards reinstalled
 - Notify Personnel: Check the work area to ensure that all employees have been safely positioned and notified that the lockout/tagout devices are being removed
 - Remove Locks and Tags

Specific Lockout Procedures

- A specific lockout procedure will be developed when equipment has one of the following criteria:
 - Equipment having more than one energy source
 - Equipment requiring more than one lockout device
 - Equipment lockout requires a group LO/TO
 - A previous accident has occurred due to unexpected start-up of equipment.
 - Equipment requires tags rather than locks

Emergency Removal of Lock; Other than by Installer

- Attempt to reach person who installed lock to find out equipment status
- Notify Installer's Supervisor
- The Installer's Supervisor will inspect equipment to be started:
 - Review work order
 - Check to that the repair has been completed
 - Guards installed
- Notify personnel in area of start-up and follow unlocking procedure outlined previously

Inspections/Enforcement

- Inspections will be made at least every 6 months to determine if LO/TO policies are being followed.
- If inspections reveal improper or lack of LO/TO procedure, retraining of affected employees will be conducted.
- Supervisors will conduct routine inspections to evaluate compliance with lockout procedures.

Retraining

- When procedure inspection reveals non-compliance
- Accidents have resulted from non-compliance with LO/TO procedures
- Changes have been made to LO/TO program
- Changes of equipment or machines

Contractors

- Outside contractors must provide a copy of their Lockout/Tagout policy to Minnesota State University Moorhead.

- The University will provide a copy of their Lockout/Tagout policy to outside contractors.
- Outside contractor's policy will be enforced in contractor's work zone.
- If contractor does not have their own Lockout/Tagout Policy, they will be required to follow Minnesota State University Moorhead's Lockout/Tagout policy
- A sign-off form will be utilized to document that contractor and the University has informed each other of LO/TO policies

References

OSHA Regulation 29 CFR 1910.146, The control of Hazardous Energy (Lockout/tagout)

Reviewed and updated: September 2022