

# Michigan Municipal Workers' Compensation Fund

## Safety and Health Resource Manual

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### Sample Lockout/Tagout Procedure

#### 1. Purpose

- A. To prevent injury from the unexpected energizing, startup or release of stored energy that could cause injury.

#### 2. Examples of Stored Energy Where Lockout/Tagout Applies

- A. Electrical
- B. Mechanical
- C. Thermal, Steam
- D. Chemical, Acids and Caustics
- E. Explosives, Natural Gas
- F. Hydraulic
- G. Pneumatic
- H. Gravity

#### 3. Scope

- A. A lockout/tagout is mandatory whenever employees perform maintenance or service work on machines or equipment.

##### ***Required Lockout/Tagout.***

- a. Maintenance or service work means constructing, installing, setting up, adjusting, inspecting, modifying, maintaining and/or servicing machines or equipment. These activities may also include lubrication, cleaning or releasing jams in machines or equipment and making adjustments or tool changes if the employee may have exposure to the unexpected energizing or startup of the equipment or release of hazardous energy.
- b. Before removal or bypassing any guard or other safety device.
- c. When an employee must place any part of his or her body into a "point of operation" or other danger zone that exists during a machine operation cycle.

##### ***Exceptions to Lockout/Tagout.***

- a. Normal production activities in which lockout cannot take place because of the nature of the operation or if the operation is routine, repetitive, and integral to the use of the equipment for production, but only if the employer provides alternative measures that provide effective protection.
- b. Cord and plug type of equipment (operator has "control" of cord).
- c. Hot Tap operations.

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### 4. Responsibilities

#### A. Safety Manager

1. Procedure development and maintenance.
2. Authorization of lockout/tagout devices.
3. Employee training.
4. Annual inspections for compliance of procedures.

#### B. Supervisors

1. Knowledge of lockout/tagout procedures.
2. Enforcement of lockout/tagout procedures.
3. Recognition when retraining is needed.
4. Participates in development of specific job procedures.

#### C. Authorized Employees to Perform Lockout

1. Understanding of purpose of lockout/tagout.
2. Understanding hazards of unexpected energizing of equipment.
3. Can perform lockout/tagout.

#### D. Affected Employees—Employees in Area of Lockout/Tagout

1. Understanding the importance of lockout/tagout and the importance of not attempting to remove a lockout/tagout device.

### 5. Approved Lockout/Tagout Devices

#### A. All authorized employees will receive specific lockout locks.

1. The Safety Manager will issue approved locks. Locks will be standardized.
2. The lock owner will receive only one key with the lock. The lock owner must maintain the key. The Safety Manager may maintain a master key but cannot use it without following lock removal procedures.
3. The lock owner's name will be engraved with his or her name.
4. The employer will maintain a record of all assigned locks in the maintenance office and the Safety Manager's office.
5. Employees must not make duplicate keys.
6. Employees must not use locks for any purpose other than lockout.
7. Multiple lock adapters will be available for all jobs requiring more than one safety lock.

#### B. Tags will not replace locks unless it is impossible to physically install locks to isolation devices. Employees will inform the Safety Manager when lockout is impossible so the Safety Manager can arrange for engineering changes that allow the use of locks.

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6. **Training**
  - A. **Frequency**
    1. During facility or job orientation.
    2. Before new job assignment.
  - B. **Affected Employee**
    1. Purpose and function of energy control (lockout/tagout) program.
  - C. **Authorized Employee**
    1. Purpose and function of energy control (lockout/tagout) program.
    2. Recognition of type and magnitude of applicable hazardous energy sources.
    3. Methods and means for isolation and control of energy (lockout/tagout)
  - D. **Record Keeping**
    1. Maintained in the Safety Manager's office.
7. **Retraining**
  - A. When procedure inspection reveals non-compliance.
  - B. Accidents due to non-compliance of procedures.
  - C. Changes in lockout/tagout program.
  - D. Changes in equipment or machines.
8. **General Lockout Procedure**
  - A. **Employee Notification**

Notify all affected employees that a lockout or tagout system is will be in use and inform them of the reason for lockout.
  - B. **Preparation**

Locate all energy sources needing isolation.
  - C. **Equipment Shutdown**

Shut equipment down by the normal stopping procedure (depress stop button, open toggle switch, etc.), if it is operating. Contact operator for shutdown procedures. *Note: Do not use the electrical disconnect switch to stop equipment.*
  - D. **Equipment Isolation**

Operate the switch, valve, or other energy isolating device(s) to cut the equipment off from its energy source(s).

    1. **For electrical energy.**
      - Locate correct electrical disconnect switch and pull down the disconnect switch.

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2. **For mechanical energy.**
  - Allow mechanical energy, such as that in springs, elevated machine members or rotating flywheels to dissipate or restrain it by methods, such as repositioning or blocking.
3. **For thermal, chemical, flammable, pneumatic, hydraulic where such energy is contained in lines or pipes.**
  - Close valves, disconnect lines, or install isolating "blanks".

### E. **Application of Lockout/Tagout Device**

Place assigned lock on disconnect switch, valve or other locking device.

1. Each person shall place his/her lock on the locking device. The use of a single lock is not permissible to represent more than one employee unless management has established procedures for such a situation and the procedure will provide "at least as effective" protection to all employees working on that particular equipment.
2. If maintenance "crew" is conducting extensive equipment service or repair that will continue into the next shift, group lockout procedures shall be followed.
  - a. Supervisor will assume responsibility or assign responsibility for group lockout.
  - b. The "responsible" individual will follow equipment lockout procedure and install group lockout device.
  - c. Each employee performing equipment servicing will install personal lockout device and remove personal lock when completing work. (This includes "responsible" individual installing group lock.)
  - d. The group lock will remain on equipment throughout repair and the "responsible" individual is the only person who can remove it.
3. Employees may not use tags unless a specific job procedure that demonstrates their necessity and correct use is in place and the tags are "at least as effective" as a lock. (The Safety Manager must approve the procedure.)

### F. **Release of Stored Energy**

It is mandatory to release, disconnect, restrain or otherwise make safe all potentially hazardous stored or residual energy. If servicing of hazardous chemical transfer lines occurs, lines must be flushed out, according to company (or manufacturer's) procedures.

### G. **"Test Start"**

After assuring that no personnel have exposure, and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate.

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### 9. Specific Lockout Procedures

- A. If equipment meets one of the following criteria, follow the specific lockout procedures for that type of equipment:
  - 1. Equipment having more than one energy source.
  - 2. Equipment requiring more than one lockout device.
  - 3. Equipment lockout requiring multiple lockout box.
  - 4. A previous unexpected energizing accident occurred to that type of equipment.
  - 5. Equipment requiring tags rather than locks.

### 10. Restoring Locked Equipment

- A. Notify personnel in startup area.
- B. Clear all tools and repair equipment.
- C. Remove locking devices.
- D. Restore all isolating devices.
- E. Notify operating personnel of operation status.

### 11. Emergency Removal of Lock; Other Than By Installer

- A. Attempt to reach person who installed lock to determine equipment status.
- B. Notify security.
- C. Security supervisor and maintenance supervisor will inspect equipment that requires starting.
  - 1. Review work order.
  - 2. Repair completed?
  - 3. Guards installed?
  - 4. Tools cleared from machinery?
- D. Notify personnel in area of startup and follow unlocking procedures. (See Section VII.)

### 12. Inspections/Enforcement

- A. Inspections will take place annually and records maintained. Safety Manager will be responsible to complete and record inspection.
- B. If inspections reveal improper or lack of lockout/tagout procedures, retraining of affected employees will be conducted.
- C. Supervisors will conduct daily inspections for compliance of lockout procedures and employees will receive discipline if they fail to lockout properly.