

City of Urbandale

Lockout/Tagout (LOTO) Policy



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Purpose

This policy covers the servicing and maintenance of machines and equipment in which the unexpected energization, start up or release of stored energy could cause injury to employees. This policy is established to allow employees to utilize a standard by which appropriate lockout devices may be affixed to energy isolating devices, and to otherwise disable machines or equipment to prevent unexpected or accidental energization, start up or release of stored energy. The policy establishes the minimum requirements for lockout and tagout of energy isolating devices. Examples of tasks that require LOTO procedures include:

- A task requiring an employee to enter a machine's point of operation or any associated danger zone.
- Repairing electrical circuits.
- Cleaning, repairing, and maintaining machinery with moving parts.
- Cleaning jammed mechanisms.
- Removing or bypassing a guard or other safety devices.

Copies of this policy will be made available to all employees during their work shifts and is located:

- Parks & Public Works Maintenance Facility (9401 Hickman Road), in the office.
- Water Utility (3720 86th Street), in the office.
- Online at www.urbandale.org/safety
- By contacting the Director of Risk Management/Support Services.

Scope

This policy applies to all equipment/machines, and all employees and any contractors, technicians, or vendors working on city equipment/machines. It further controls all lockout procedures specific to individual equipment/machines.

Leadership and Accountability

The Director of Risk Management/ Support Services, or the department Safety Leadership representative will be responsible for annually evaluating the lockout/tagout (LOTO) policy's effectiveness and the appropriateness of the lockout devices. They will also establish required training pertaining to lockout/tagout procedures.

Directors or their representatives will be responsible for understanding the policy and for ensuring all levels of their departments enforce all lockout procedures.

Supervisors in each department will work with their Safety Leadership representative(s) to coordinate written procedures and training of lockout/tagout procedures. They must ensure that all department employees are trained and comply with all procedures for the applicable equipment/machine being locked out. They must ensure lockout procedures are updated as machine/equipment specifications or operational characteristics change. They must inspect authorized employees at least annually. Additionally, they must advise all outside contractors of this program to ensure compliance with this policy.

Employees are accountable to know and follow this policy. Employees are also accountable for the proper care, maintenance, and correct use of equipment provided for the job according to their training. Only designated and trained employees are allowed to implement and remove lockout devices. Are prohibited from placing any part of their body into an area of the equipment/machine where work is being performed or where an associated danger zone exists during an equipment/machine operation cycle. Additionally, employees will not attempt to operate any switch, valve, or other energy isolating device(s) when it is locked out.

Employees should refer questions or comments about this policy to:

- Parks & Facilities - Facilities Maintenance Supervisor and/or Parks Supervisor
- Public Works - Assistant Director of Public Works
- Water Utility - Distribution Manager
- Director of Risk Management/Support Services

Equipment and Machinery Evaluations

All equipment and machinery operated or serviced by employees shall be individually evaluated for an equipment or machine-specific lockout procedure using the Equipment/Machinery Evaluation form (*See Appendix B*). Completed forms shall be maintained within the department electronically or affixed to the equipment or machinery.

Employee Information and Training

There are three types of employees which must receive training: authorized, affected, and other. The amount and type of training that each employee receives is based upon the relationship of that employee's job to the machine or equipment being locked or tagged out and upon the degree of knowledge relevant to hazardous energy that the employee must possess.

Initial training shall be conducted and consist of a complete interpretation of this policy. All employees shall receive training as affected or as other employees. Authorized employees shall be trained in specific equipment procedures.

Retraining will be conducted on an annual basis for authorized and affected employees. In addition, retraining will be conducted when a change in machinery, equipment or process occurs that presents a new hazard, or when there is a change in the energy control procedures.

When tagout only is utilized, as opposed to lockout, employees must receive additional training to ensure employee protection. Training records will be documented and retained by the Director of Risk Management/Support Services.

Periodic Inspections

Periodic inspections of authorized employees will be conducted at least annually. The inspections are conducted to correct any deviations or inadequacies. Inspections will include a review between the inspector and each authorized employee of the employees' responsibilities under this policy. *See Appendix C for the Periodic Inspection Form.* The Director of Risk Management/Support Services or the Safety Leadership representative will audit periodic inspection forms annually.

Authorized Employees

Authorized employees are those who have received proper training and have been “authorized” by their department to apply LOTO devices when necessary. Training for Authorized Employees shall include:

- Recognition of locations, types, and magnitudes of potential hazardous energy sources in the work area.
- Proper LOTO procedures.
- Proper use of LOTO devices.
- LOTO device removal.
- How to deal with special conditions.

Affected & Other Employees

Affected employees are those employees affected by the shut down or who work in areas where equipment is being serviced/maintained. Other employees are employees who may be in the vicinity when lockout is being utilized. Training for Affected and Other Employees shall include:

- Purpose and use of the LOTO procedures.
- How to recognize LOTO equipment.
- Prohibition of tampering with LOTO equipment.

Retraining

Employee retraining is required when:

- There is a new or revised energy control procedure.
- An Authorized Employee’s job duties change regarding LOTO.
- The LOTO program or policy has changed.
- Additional LOTO hazards arise, such as new equipment, modified processes or the use of different LOTO devices.
- Periodic inspections show employee deficiencies in energy control techniques.

Lockout/Tagout (LOTO) Devices

Lockout/Tagout equipment consists of tags, locks, hasps, chains, and other hardware used to prevent the operation of equipment or machinery that is being serviced or maintained. Lockout devices must be used whenever possible to ensure a positive means of energy control, by holding equipment in a safe, deenergized or off position. Tags should be used in conjunction with lockout devices to warn against operation

Regardless of the device being used, all LOTO devices must meet minimum criteria, which includes:

- They must be durable construction and capable of withstanding the condition in which they are placed.
- They must be identified as LOTO devices and must only be used for the control of hazardous energy sources. All other uses are prohibited.
- Must identify the individual applying the device.
- Must not be bypassed, ignored or otherwise defeated.

- It should be standardized within each department in color, size, shape and format.
- Should only be removed by the Authorized Employee originally attached them.

Use of Tags

Use of tags alone is allowed only when equipment cannot be physically altered to accept a lockout device. In this case, all other procedures consistent with the lockout program must be followed. The tags must be affixed as closely as possible to the isolation devices, immediately obvious to anyone attempting to restart the equipment/machine. Additional control measures must be taken to reinforce the tagout device (such as opening an extra disconnecting device, removal of a valve handle, or additional training).

Tags must be legible and understandable by all employees and must contain warnings against energizing the equipment, such as DO NOT START, DO NOT OPEN, DO NOT CLOSE, DO NOT ENERGIZE, or DO NOT OPERATE. Tags must be in plain view, at the same location as the energy isolation devices and must be securely attached to prevent accidental removal.

WARNING: tags are only warning devices affixed to energy isolation devices and DO NOT provide a physical restraint on those devices. Tags may evoke a false sense of security.

Tag out procedures without the use of a lock will ONLY be allowed when the energy isolating device(s) is within physical eyesight and no more than fifty (50) feet away from the employee performing the maintenance and/or servicing of the equipment. If this prerequisite cannot be met, lockout procedures must be implemented to ensure the safety of the employee(s).

Cord & Plug Devices

Electrical equipment that can be unplugged from an outlet and has no other hazardous energy sources does not fall under the requirements of this policy if the plug is under the exclusive control of the employee performing service or maintenance. If the employee is unable to maintain exclusive control of the plug, then a plug lock or other suitable energy isolation device must be used in accordance with this policy.

Lockout/Tagout Procedures

Before service/maintenance can begin, the following procedures must be implemented in the order listed below when locking or tagging out equipment.

1. Prepare for shutdown:

The Authorized Employee shall evaluate the equipment to be serviced, identify all sources of hazardous energy and the methods necessary to control it.

2. Notify all Affected Employees:

The Authorized Employee turning off the power shall notify Affected Employees in the work area that power will be shut off, the reason for the shut-down, and that the equipment will be locked/tagged out.

3. Shut down equipment:

The equipment/machine shall be shut down by the normal stopping procedure. When appropriate, a “DO NOT OPERATE” tag shall be affixed to the power switch.

4. Isolate equipment:

The equipment/machine shall be de-energized, secured, and isolated from hazardous energy sources. An orderly shutdown must be utilized to avoid any increased or additional hazard(s) to employees.

5. Release stored energy:

After lockout devices have been placed on the equipment/machine, all stored electrical, gravitational, mechanical and/or thermal energy must be disconnected and drained to a zero-energy state or otherwise made safe by the blocking or repositioning of the equipment/machine. This can be accomplished by:

- Releasing pressured lines such as hydraulic, air, steam, gas and water.
- Releasing spring-loaded equipment/machine.
- Blocking mechanical equipment that has moving, rotating or elevating parts.

6. Lockout/tagout:

The Authorized Employee shall place locks and/or tags on the appropriate energy isolating locations and devices.

7. Verify Isolation:

Before performing maintenance on the equipment/machine, the Authorized Employee verifies the system is isolated. This is generally accomplished by first establishing that no employees are exposed and then turning the equipment/machine to the “ON” position using the normal operating controls. Verification of isolation must be continued if there is a chance of the re-accumulation of stored energy during the service/maintenance activity.

CAUTION: Return the operating control(s) to neutral or off position after completion of test.

8. Perform service/maintenance activity:

Perform maintenance on the equipment/machine.

9. Removal of lockout/tagout (LOTO) devices & return to service

Once the specific maintenance or service work has been completed, the person who attached the lock or tag is responsible for promptly removing that device. Removal of lockout/tagout (LOTO) devices will be accomplished by following the steps listed below:

- Inspect the work area. Ensure that the equipment/machine is fully assembled and operational, all tools and nonessential items are removed, and all safety guards are reinstalled.
- Ensure that all employees are clear of the equipment/machine.
- Remove the LOTO device. Each device must be removed by the person who put it on unless the conditions listed below in “Removal of Another Person’s Device” are met.
- Re-energize the equipment/machine.
- Notify Affected Employees that service has been completed and the machine is ready for use.
- Complete the Equipment/Machinery Evaluation form (*See Appendix B*). File the document with the department's Lockout/Tagout Program.

Exception To Lockout Procedure

It is recognized that there are certain servicing operations which, by their very nature, must take place without de-energization, such as operational testing of machinery or equipment, sampling, tooling changes and adjustments which take place during “normal” production.

Servicing operations which are to be classified as “normal” servicing operations, are not applicable to this policy, provided:

- These servicing operations do not increase the risk of injury to the employee performing the service.
- Guards or other safety mechanisms or switches are not removed or bypassed to accomplish the servicing operation.
- The service is performed in such a way to prevent exposure of the employee to accidental or unexpected activation of the equipment or machine.

Note: Operations such as cleaning and un-jamming machines/equipment are covered by this policy when the employee is exposed to greater or different hazards than those encountered during normal operations.

Special Conditions

To provide continuity of LOTO protection, the following steps are required for these special situations.

Group Lockout/Tagout (LOTO)

A group LOTO is necessary when service/maintenance is performed by more than one individual. A procedure must be developed that outlines how group LOTO will occur. Group LOTO can be accomplished by a lockout device that accepts multiple locks or a group lock box (stores all keys to locks used and can only be opened by one individual). One person from the group should be selected to oversee the LOTO procedure. The group representative will be responsible for:

- Affixing the group lockout device or maintaining control of the lock box.
- Ensuring that lockout/tagout procedures are followed, including verifying that equipment is de-energized.
- Continually monitoring the work to ensure that employees on the crew are not exposed to lockout/tagout hazards.
- Verifying that all procedures for returning the equipment back into service are completed before lockout/tagout devices are removed.

Shift Changes

When equipment/machine maintenance extends beyond one work shift, a procedure must be in place to transfer control of the equipment/machine to the arriving shift. This transfer is the responsibility of all departing and arriving shift supervisors involved with the maintenance project. Responsibilities include:

- Overseeing the transfer of control of the existing LOTO device(s) or the attachment of a separate device(s).
- Ensuring that the continuity of the energy control procedure is maintained until the oncoming shift supervisor arrives and takes control of the job.
- Documenting the method used (original device or separate device) on the Energy Control Procedures form or its equivalent.

Exchange of Information with Contractors

When some or all maintenance work is to be performed by contractors, information exchange must occur to ensure that all parties know how LOTO of equipment/machines will take place. Employees must:

- Ensure that there is an appropriate exchange of information regarding LOTO procedures to be used by both the department and the contractor.
- Inform Authorized Employees of any differences (such as restrictions and prohibitions) between the two procedures.

Testing of Positioning of Equipment/Machines

When an employee must move part of a machine to test or position it for service/maintenance, and reenergization is required, the temporary removal of LOTO devices and subsequent reenergization must follow this sequence:

- Clear equipment/machine of tools and other miscellaneous materials.
- Remove all employees from the equipment/machine area.
- Remove LOTO devices.
- Energize and proceed with testing or positioning.
- De-energize and reapply LOTO devices.

Removal of Another Person's Device

Under normal conditions, only the employee who initially applied the lockout devices(s) is authorized to remove it in compliance with this policy. The purpose of this section is to outline the steps that must be taken when, for whatever reason, it is impossible to contact the employee(s) who applied the device(s) or due to an urgent situation, it is necessary to remove the device(s).

Before removing a lock or tag that has been affixed by another employee, the supervisor must:

- Verify that the employee who attached the device is not available to remove the device.
- Make all reasonable efforts to notify the employee that their device will be removed.
- Ensure the Authorized Employee knows that the LOTO device has been removed. This must be done before the employee resumes work.

The device(s) may then be removed under the direction of the supervisor, only after the irregular removal checklist (*See Appendix D.*) has been completed and signed by the one authorizing the removal of the device(s).

Machinery/Equipment Updating

After January 1, 1992, whenever major replacement, renovation or modification of machinery or equipment is performed, and whenever new machinery or equipment is installed, energy isolating device(s) for such machinery or equipment shall be designed to accept a lockout device.

Appendix A: Definitions

Affected Employee

An employee whose job requires operation or use of equipment/machines on which service/maintenance activities are performed under lockout/tagout, or whose job requires work in an area where such service/maintenance activities are being performed.

Authorized Employee

An employee who locks out or tags out equipment/machines to perform service/maintenance activities. An authorized employee is only authorized on the equipment/machinery in which they have been trained.

Energized

Connected to an energy source or containing residual or stored energy.

Energy Isolating Device (Mechanism)

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 ungrounded supply conductors, and, in addition, no pole can be operated independently
- A line valve
- A block and any similar device 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.

Lockout

The placement of a lockout device on an energy isolating mechanism in accordance with established procedures. The lockout device will ensure that the equipment being controlled cannot be operated until the lockout device is removed.

Lockout Device

A device that utilizes a positive means such as a lock (either key or combination type) to hold an energy isolating mechanism in a safe position and prevent the energizing of equipment/machines. Included are blank flanges and bolted slip blinds.

Other Employee

All employees who are or may be in an area where energy control procedures may be utilized.

Potential Hazardous Energy Sources

Any source of gas, electrical, mechanical, hydraulic, pneumatic, chemical, gravity, steam, thermal, tension or other energy sources.

Service/Maintenance

Includes workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, or servicing/maintaining equipment/machines. These activities include lubrication, cleaning and unjamming of equipment/machines, and making adjustments or tool changes in areas where employees may be exposed to the unexpected energization or startup of the equipment or to the release of hazardous energy.

Tagout

The placement of a tagout device on an energy isolating mechanism in accordance with established procedures. The tag should state that the energy isolating mechanism and the equipment being controlled may not be operated until the tagout device is removed.

Tagout device

A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until tagout device is removed.

Appendix B

Equipment/Machinery Evaluation Form

Equipment: _____

Number/Description: _____

Location: _____

Completed by:

Check all that apply:

Electrical

Hydraulic

Pneumatic

Gravity

Spring

Other: _____

Procedures to isolate energy sources:

APPENDIX C

Date of Inspection: _____ Inspector Name: _____

Equipment being Inspected: _____ Department: _____

Employee(s) Performing Lockout: _____

Ensure the Following Steps are Completed:

Lockout Steps:	Description of deficiency(ies) found, if any:	Description of deviation(s) from procedure, if any:
Shutdown Preparation (includes knowledge of energy source(s), lockout device(s) needed, etc.)		
Inform all affected employees (set out lockout sign at minimum)		
Proper shutdown (all equipment components, if applicable)		
Apply lockout device(s), lock(s), tag(s)		
Stored/residual energy released/blocked/rendered safe		
Verify lockout, then return to off/safe position		
Lockout Removal Steps:		
Area clear of employees, tools, materials, etc.		
Safety devices re-installed		
Remove lockout devices and conduct "trial run"		
Notify affected employees		

Attach completed Training Documentation Form to include all employees involved in the lockout audit.

Appendix D

IRREGULAR REMOVAL CHECKLIST

DETERMINATION OF NEED (by supervisor):

1. [] Need is valid for lockout removal.
2. [] Attempt to contact originating employee.
3. [] Locate on site authorized employee.

PREPARATION FOR REMOVAL (by authorized employee):

1. [] Ensure that you know and understand the procedure for that specific machine.
2. [] Notify all affected employees and supervisor

REMOVAL OF LOCK OUT/TAG OUT DEVICE(S):

1. [] Ensure that all machine servicing and/or maintenance is complete and ready for normal production. If not complete, maintain lockout and complete the service/maintenance.
2. [] Ensure that all tools, parts, mechanical locks and any like items are removed from machinery or equipment.
3. [] Ensure that all guards, shrouds and safety devices are properly re-installed and operational.
4. [] Inform supervisor on completion of work.
5. [] Notify other personnel in the area and ensure that all personnel are clear and that no one is exposed to any potential hazard.
6. [] Cut lock to remove lockout device(s). This is to be performed by the maintenance or department supervisor.
7. [] Perform a final inspection area to ensure that machinery or equipment is operational and safe for normal production status.
8. [] Operate energy isolating devices to restore power to machinery or equipment.
9. [] Inform affected supervisor and affected employees that machine is no longer locked out.

FOLLOW UP (by supervisor):

1. [] Inform initiating employee that their lock was removed.
2. [] Turn in signed checklist to safety manager.

Authorized Employee: _____ Date: _____

Supervisor: _____ Date: _____