City of Portland

Lockout/Tagout Policy

Purpose:

This establishes the City of Portland policy for protecting employees who must do service or maintenance on machines or equipment and who could be injured by an unexpected start-up or release of hazardous energy.

This policy will ensure that machinery or equipment is stopped, isolated from all hazardous energy sources, and properly locked or tagged out per OSHA 29 CFR 1910.147.

Policy

All equipment must be locked out to protect against accidental or inadvertent operation that could cause injury to personnel. Locks are to be applied and removed only by the authorized employee(s) who is performing the servicing or maintenance.

No one should attempt to operate locked-out equipment.

Definitions:

Affected employee: A person who uses equipment that is being serviced under lockout or tagout procedures, or who works in an area where equipment is being serviced.

Authorized employee: A person who locks out or tags out equipment to do service or maintenance work. An affected employee becomes an authorized employee when that employee's duties include service or maintenance work on equipment.

Capable of being locked out: An energy-isolating device that is designed with a hasp or other means of attachment to which, or through which a lock can be affixed, or if it has a locking mechanism built into it. Other energy-isolating devices will also be considered to be capable of being locked out, if lock out can be achieved without the need to dismantle, rebuild, or replace the energy-isolating device or permanently alter its energy-control capability.

Disconnect: A switch that disconnects an electrical circuit or load (motor, transformer, or panel) from the conductors that supply power to it. An open circuit does not allow electrical current to

flow. Under a lockout procedure, a disconnect must be capable of being locked in the open position.

Energized: Connected to an energy source or containing potential energy.

Energy source: Any source of energy. Examples: electrical, mechanical, hydraulic, pneumatic, chemical, and thermal.

Energy-isolating device: A mechanical device that physically prevents transmission or release of energy.

Hazardous energy: Any of the types of energy existing at a level or quantity that could be harmful to workers or cause injury through inadvertent release or start-up of equipment.

Lockout device: A device that locks an energy-isolating device in the safe position.

Lockout: Placing a lockout device on an energy-isolating device, under an established procedure, to ensure the energy-isolating device and the equipment it controls can't be operated until the lockout device is removed. (An energy-isolating device is capable of being locked out if it has a hasp that accepts a lock or if it has a locking mechanism built into it.)

Procedure: A series of steps taken to isolate energy and shut down equipment.

Servicing or maintenance: Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining machines or equipment. Also includes lubricating, cleaning, unjamming, and making adjustments or tool changes if a worker may be exposed to the unexpected startup of the equipment during such activities.

Tagout device: A prominent warning sign, such as a tag, that can be securely fastened to an energy-isolating device to indicate that the energy-isolating device and the equipment it controls can't be operated until the tagout device is removed.

Tagout: Placing a tagout device on an energy-isolating device, under an established procedure, to indicate that the energy-isolating device and the equipment it controls can't be operated until the tagout device is removed.

Responsibility:

The City of Portland is responsible for implementing and enforcing this policy.

Supervisors are responsible for ensuring that employees are trained on this policy and on the lockout/tagout procedures unique to their workplace. Supervisors must enforce the use of lockout and tagout devices when employees do service or maintenance work and may be exposed to hazardous energy.

All employees are responsible for reviewing, understanding, and complying with this policy. Specifically, employees who do service and maintenance work must follow the lockout/tagout procedures described in this policy. Employees who work in areas where lockout/tagout procedures are used must understand the purpose of the procedures and are prohibited from attempting to restart machines or equipment that are locked or tagged out.

Lockout and tagout devices

All qualified Maintenance personnel will be assigned a lock with one key, hasp and tag. All locks will be keyed differently, except when a specific individual is issued a series of locks for complex lockout-tagout tasks. In some cases, more than one lock, hasp and tag are needed to completely de-energize equipment and machinery. Additional locks may be checked out from the Department Manager or designee on a shift-by-shift basis. All locks and hasps shall be uniquely identifiable to a specific employee.

Lockout and tagout devices must meet the following criteria to ensure that they are effective and not removed inadvertently:

- Lockout devices must work under the environmental conditions in which they are used. Tagout device warnings must remain legible even when they are used in wet, damp, or corrosive conditions.
- Lockout and tagout devices must be designated by color, shape, or size. Tagout devices must have a standardized print and warning format.
- Lockout devices and tagout devices must be strong enough that they can't be removed inadvertently. Tagout devices must be attached with a single-use, self-locking material such as a nylon cable tie.
- Any employee who sees a lockout or tagout device must be able to recognize who attached it and its purpose.
- Each lock must have a unique key or combination.

Energy-isolating devices are the primary means for protecting City of Portland employees who service equipment and must be designed to accept a lockout device. Energy isolating devices must clearly identify function.

Electrical energy sources. Lockout or tagout of electrical energy sources must occur at the circuit disconnect switch. Electrical control circuitry does not effectively isolate hazardous energy. See also, **Alternative methods**.

Exposure survey

The Safety Department will work with Departments to conduct hazardous-energy surveys to determine affected machines and equipment, types and magnitude of energy, and necessary service and maintenance tasks. Each task will be evaluated to determine if it must be accomplished with lockout or tagout procedures and what those procedures must be. These energy-control procedures will be documented using the form in Appendix B, or similar form.

Energy control procedures

Authorized employees who lockout or tagout equipment or do service and maintenance must follow the specific written energy-control procedures. The procedures must include the following information.

- The intended use of the procedure
- Steps for shutting down, isolating, blocking, and securing equipment
- Steps for placing, removing, and transferring lockout devices
- Equipment-testing requirements to verify the effectiveness of the energy-control procedures

When re-energizing equipment is necessary — when power is needed to test or position the equipment, for example — temporary removal of lockout or tagout devices is allowed. This applies only for the time required to perform the task and the procedure must be documented.

Employees must do the following before they begin service or maintenance work:

1. Inform all affected employees of equipment shutdown.
2. Shut down equipment.
3. Isolate or block hazardous energy.
4. Remove any potential (stored) energy.
5. Lockout or tagout the energy sources.
6. Verify the equipment is isolated from hazardous energy and de-energized.

Specific energy control procedures are found in Appendix A.

Employees must do the following when they remove lockout or tagout devices and re-energize equipment:

1. Remove tools and replace machine or equipment components.
2. Inform co-workers about energy-control device removal.

3. Ensure all workers are clear of the work area.
4. Verify machine or equipment power controls are off or in a neutral position.
5. Remove the lockout or tagout device.
6. Re-energize equipment.

Training

Employees who may be exposed to hazardous energy will receive training before assignment to ensure that they understand the City of Portland energy-control policy and have the skills to apply, use, and remove energy controls. The training will include the requirements of 1910.147 and the following:

- Affected employees will be trained in the purpose and use of energy-control procedures.
- Authorized employees will be trained to recognize hazardous energy sources, the type and magnitude of energy in the workplace, the methods and means necessary for isolating and controlling energy, and the means to verify that the energy is controlled.
- Employees whose jobs are in areas where energy-control procedures are used will be trained about the procedures and the prohibition against starting machines that are locked or tagged out.
- Employees will be retrained annually to ensure they understand energy-control policy and procedures.
- Authorized and affected employees will be retrained whenever their job assignments change, energy-control procedures change, equipment or work processes present new hazards, or when they don't follow energy-control procedures.

Current training records will be maintained for each authorized and affected employee including the employee's name and the training date

Inspections of written energy-control procedures

The City of Portland will perform and document annual inspections of energy-control procedures to ensure that employees understand and use them effectively. Documentation will include the following:

- The equipment on which the procedure is used.
- The date of the inspection.
- The employees included in the inspection.
- The inspector.

If an inspector finds that employees are not following an energy-control procedure or that the procedure is not protecting them, employees must be retrained and the procedure's deficiencies corrected.

The inspector must understand the procedure and must be someone other than those following the procedure at the time of the inspection. Each procedure's accuracy, completeness, and effectiveness must be verified.

If the inspection covers a procedure for equipment with an energy-isolating device that can be *locked out*, the inspector must review the procedure with the employees who use it to service the equipment. The inspector can review the procedure with the employees individually or in a group.

If the inspection covers a procedure for equipment with an energy-isolating device that can only be *tagged out*, the inspector must review the procedure with the authorized employees who service the equipment and with affected employees who may work in the area when the equipment is serviced. The inspector can review the procedure with the employees individually or in a group.

Individuals with questions about the LOTO Policy should address them to their supervisor or safety officer.

RELATED DOCUMENTS

Bench Grinding Safety Standard Operating Procedures

POLICY VIOLATIONS

Any employee who violates this policy may be subject to discipline under the City's AR-25 Disciplinary Procedures Policy, up to and including termination of employment. The prohibitions in this policy are intended to complement any conduct or performance restrictions provided in additional City and departmental policies and procedures.

Disciplinary action will be applied if any employee violates these procedures, regardless of whether or not physical harm or equipment damage results.

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Jon P. Jennings **Date**
City Manager

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Revision Dates: 2.20.20

Appendix A
Specific energy-control procedures

The following are the procedures for specific equipment associated with the following types of energy:

Electrical

1. Shut off power at machine and disconnect.
2. Disconnecting means must be locked or tagged.
3. Press start button to see that correct systems are locked out.
4. All controls must be returned to their safest position.
5. Points to remember:

a. If a machine or piece of equipment contains capacitors, they must be drained of stored energy.

b. Possible disconnecting means include the power cord, power panels (look for primary and secondary voltage), breakers, the operator's station, motor circuit, relays, limit switches, and electrical interlocks.

c. Some equipment may have a motor isolating shut-off and a control isolating shut-off.

d. If the electrical energy is disconnected by simply unplugging the power cord, the cord must be kept under the control of the authorized employee or the plug end of the cord must be locked out or tagged out.

Hydraulic/Pneumatic

1. Shut off all energy sources (pumps and compressors). If the pumps and compressors supply energy to more than one piece of equipment, lockout and/or tagout the valve supplying energy to the piece of equipment being serviced.
2. Stored pressure from hydraulic/pneumatic lines shall be drained/bled when release of stored energy could cause injury to employees.
3. Make sure controls are returned to their safest position (off, stop, standby, inch, jog, etc.).

Fluids and Gases

1. Identify the type of fluid or gas and the necessary personal protective equipment.
2. Close valves to prevent flow, and lockout/tagout.
3. Determine the isolating device, then close and lockout/tagout.
4. Drain and bleed lines to zero energy state.
5. Some systems may have electrically controlled valves. If so, they must be shut off and locked/tagged out.
6. Check for zero energy state at the equipment.

Mechanical Energy

Mechanical energy includes gravity activation, energy stored in springs, etc.

1. Block out or use die ram safety chain.
2. Lockout or tagout safety device.
3. Shut off, lockout or tagout electrical system.
4. Check for zero energy state.
5. Return controls to safest position.

Special lockout/tagout situations

Energized testing

When an energy-isolating device is locked or tagged and it is necessary to test or position equipment, do the following:

1. Remove unnecessary tools and materials.
2. Ensure that all other employees are out of the area.
3. Remove locks or tags from energy isolating devices.
4. Proceed with test.
5. De-energize equipment and lockout or tagout energy-isolating devices.
6. Operate equipment controls to verify that the equipment is de-energized.

Contract service and maintenance

The City of Portland and contractors must be aware of their respective lockout/tagout procedures before the contractor does onsite work. City of Portland employees must understand and comply with the contractor's energy-control procedures.

Shift changes and long-term shutdowns

The continuity of lockout or tagout will be ensured at shift change by following one of the three following procedures.

1. Authorized Employee shall complete work prior to shift change.
2. The relieving Authorized Employee shall add their lock on the multiple lock scissors clamp so the departing Authorized Employee can remove his/her lock.
3. Prior to completing their shift, Authorized Employee has confirmed no one is servicing the equipment and places a blue maintenance lock on the multiple lock scissors clamp. Another Authorized Employee could then remove the blue maintenance lock after their lockout lock is secured in place and continue the service or repair.

Service or Maintenance Involving More Than One Person

When servicing and/or maintenance is performed by more than one person, each Authorized Employee shall place his own lock or tag on the energy isolating source. This shall be done by utilizing a multiple lock scissors clamp.

When a multiple lock scissors cannot be applied, i.e. in a breaker panel, then a lock from the department supervisor shall be applied to the breaker. The breaker panel lockout key should be

secured in a manner that would require a multiple lock scissors clamp to be removed to access breaker key. Each Authorized Employee must also place his lock or tag on the equipment.

Alternative methods

When lockout or tagout is *not* used for tasks that are routine, repetitive, and integral to the production process, or prohibits the completion of those tasks, then an alternative method must be used to control hazardous energy.

Selection of an alternative control method must be based on a risk assessment of the machine, equipment, or process. The risk assessment must consider existing safeguards provided with the machine, equipment or process that may need to be removed or modified to perform a given task.

For example, when control circuits are used as part of the safeguarding system, the system must be designed to ensure protection as effective as a mechanical disconnect switch or master shut-off valve. A control-reliable dual channel hardwired circuit of industrially-rated components that satisfies the design features as specified in ANSI B11.19, with a safety relay or safety PLC to ensure integrity and performance of the safeguarding system, must be used.

Under all circumstances, the individual must have exclusive personal control over the means to maintain the state of the control circuit in a protective mode.

Procedure for Outside Personnel/Contractors

Outside personnel/contractors shall be advised that the City of Portland has, and enforces, the use of lockout/tagout procedures. They will be informed of the use of locks and tags and notified about the prohibition of attempts to restart or re-energize machines or equipment that are locked out or tagged out.

Outside personnel/contractors involved in lockout of equipment or machinery that affects our employees must submit their energy control procedures, in writing, to the Responsible Persons. If the contractor's procedures do not meet OSHA requirements, they must follow the City of Portland - Control of Hazardous Energy (Lockout/Tagout). All affected employees must be trained that all Locks and Tags on equipment shall be treated as if they are part of our program regardless if they look different and are part of the contractor's program.

Appendix B
Equipment-Specific Lockout/Tagout Energy Control Procedures

Date:
Inspector:
Other employees present:
Department:
Equipment:
Hazardous energy potential:

Steps for shutting down, isolating, blocking, and securing:

Steps for placing, removing, and transferring lockout devices:

Equipment-testing requirements to verify energy-control procedures:

Steps for re-energizing: