

MULTNOMAH COUNTY, OREGON
ADMINISTRATIVE PROCEDURE RSK-16

SUBJECT: Lockout/Tagout (Control of Hazardous Energy)

PURPOSE: The purpose of this administrative procedure is to ensure that before any employee performs any servicing or maintenance on a machine or piece of equipment, the machine or equipment is isolated and rendered inoperative. This procedure for control of lockout/tagout devices covers the servicing and maintenance of machines or equipment in which the unexpected energizing or start-up of the machine or equipment, or the release of stored energy, could cause injury to employees.

ORGANIZATION RESPONSIBLE: Risk Management Section

CHAIR JEFF COGEN

DATE: June 15, 2012

ORGANIZATIONS AFFECTED: All Departments/Offices

LEGAL CITATION/REFERENCE: OAR 437-2/J-1910.147 "The Control of Hazardous Energy (Lockout/Tagout)."
MCC 7.100 to 7.202.

I. PROCEDURE DESCRIPTION

A. General

1. This procedure is applicable to all Departments/Offices.
2. This procedure is intended to meet the requirements for a written lockout/tagout program as set forth in Oregon Occupational Safety and Health Division (OR-OSHA) regulation 437-2/J-1910.147.
3. This procedure covers equipment and machines at all Multnomah County sites, or equipment under the control of County employees

regardless of location. Note that this program does not apply to cord and plug equipment that can be unplugged and is under complete control of the person doing the work.

4. The items contained in this procedure are mandatory and are a condition of employment for all individuals.

II. DEFINITIONS

- A. **Affected Employee:** An employee whose job requires them to operate or use a machine or piece of equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires them to work in the area.
- B. **Authorized Employee:** An employee who locks or implements a tagout system on machines or pieces of equipment and has been trained to do so.
- C. **Energy Isolating Device:** A mechanical device that physically prevents the transmission or release of energy.
- D. **Energy Source:** Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.
- E. **Lockout:** Placement of a lockout device on an energy isolating device ensuring that the energy isolating device and equipment being controlled cannot be operated until the lockout device is removed.
- F. **Lockout Device:** A device, such as a lock, placed on an energy-isolating device to prevent the energizing of a machine or equipment.
- G. **Tagout:** Placement of a tagout device on an energy isolating device indicating that the energy isolating device and equipment being controlled may not be operated until the tagout device is removed.
- H. **Tagout Device:** A prominent warning device that can be securely fastened to an energy isolating device to indicate that the energy isolating device and equipment being controlled may not be operated until the tagout device is removed.
- I. **Capable of being locked out.**
An energy isolating device is capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy isolating devices are capable

of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

- K. **Hot tap.** A procedure used in the repair, maintenance and services activities which involves welding on a piece of equipment (pipelines, vessels or tanks) under pressure, in order to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam, and petrochemical distribution systems.

III. BASIC PROGRAM REQUIREMENTS

A. Authorized Employees

Only Authorized Employees may apply and remove lockout/tagout devices. Each Department will designate and maintain a list of Authorized Employees.

B. Contractors and other Non-Multnomah County Personnel

Any non-Multnomah County personnel working on County sites, including private contractors, utility workers, or employees of other public entities must be notified of the Multnomah County's lockout/tagout program when their responsibilities require working on any type of energized equipment that may affect Multnomah County employees. The property or project manager who is arranging for the work to be done will provide a copy of this Procedure, or discuss with, the non-Multnomah County personnel and a mutually agreed upon procedure will be established to fully protect all involved personnel.

C. Lockout and Tagout Devices

These devices must meet the following criteria:

1. They must be singularly identified and will be the only devices used for controlling energy and not be used for other purposes;
2. They must be standardized in at least one of the following criteria: color, shape, or size. Additionally, when tagout devices are used they will be standardized with respect to print and format. Attachment D of this policy gives an example of acceptable tags;

3. Lockout and tagout devices will indicate the identity of the employee applying the device;
4. Each employee using a lockout device must have the only key to the lock;
5. Tagout devices will warn against specific hazardous conditions if the machine or piece of equipment is energized, and will include a legend such as the following: "Do Not Start," "Do Not Open," "Do Not Close," "Do Not Energize," "Do Not Operate."

D. Lockout/Tagout Procedures

If an energy-isolating device is capable of being locked out, then lockout must be used. If an energy-isolating device is not capable of being locked out, a tagout device must be used. Per OR-OSHA regulations, all new equipment, or equipment subject to major repair or modification, must have an energy-isolating device capable of accepting a lockout device.

1. Before a machine or piece of equipment is turned off, the authorized employee will know the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy. More than one energy source may be involved;
2. All affected employees will be notified that a lockout or tagout device is going to be utilized and the reason for it;
3. An orderly shutdown must be utilized to avoid any additional hazards to employees. Shut down the machine or piece of equipment using the normal shutdown procedures;
4. Lockout or tagout devices will be affixed to each energy-isolating device by the Authorized Employee. Lockout devices will be affixed in a manner that will hold the energy-isolating device in a safe or off position;
5. Following the application of lockout or tagout devices, all potentially hazardous stored or residual energy will be relieved, disconnected, restrained, or otherwise rendered safe;
6. Prior to starting work on machines or equipment which have been locked or tagged out, the Authorized Employee must verify that isolation and de-

energizing of the machine or equipment has been accomplished. This is accomplished by attempting to start the machine or piece of equipment;

7. After completing step 6, return operating controls to the neutral or off position.

E. Equipment Testing While Under Lockout/Tagout

In some instances it may be necessary to operate equipment or machines during maintenance or servicing. If so, the following steps must be taken to protect personnel:

1. Clear the equipment or machine of all tools and materials that are non-essential items;
2. Make sure that all personnel are clear of the equipment or machine and notify them that the machine will be energized;
3. The Authorized Employee will remove the lockout or tagout device;
4. Energize the machine or equipment and proceed with testing or positioning;
5. After testing or positioning, de-energize the equipment or machine, complete all shutdown procedures, and reapply lockout or tagout devices before continuing with further maintenance or servicing.

F. Work on Energized Equipment or Systems

In some cases work must be done on a piece of equipment or system while it remains energized. An example of this is an electrical system that cannot be taken off-line while work is being done on it. In these cases, procedures and practices must be in place to ensure the safety of personnel working on or near the energized equipment or system. Procedures and practices which may be used as appropriate to ensure personnel safety include, but are not limited to:

1. Ensuring only properly trained and knowledgeable personnel work on the energized equipment/system;
2. Utilizing appropriate protective equipment (e.g. insulated tools and PPE) when working on the energized equipment/system; and
3. Performing work on the energized equipment/system when the least

number of non-essential personnel are around (evenings, weekends).

G. Release from Lockout/Tagout

Before lockout or tagout devices are removed and energy is restored, the Authorized Employee must ensure that nonessential items have been removed and that machine or equipment components are intact. In addition, the Authorized Employee must ensure all other employees have been safely positioned or removed from the area.

Each lockout or tagout device will only be removed by the employee who applied the device. If that employee is not available, the device can be removed providing the following conditions are met:

- a. It has been verified that the employee is not at the site;
- b. A reasonable effort has been made to contact the employee to inform them about the removal;
- c. The employee is informed about the device removal before that employee resumes work at the site;
- d. Standard procedures for removing a lockout/tagout device are followed;
- e. Only the supervisor of the employee who attached the device may remove it;
- f. Notice of device removal will be posted at the site for a minimum of one shift or until the authorized employee returns to the site;
- g. If a contractor attached the device, only the contractor's supervisor may remove the device. If the contractor's supervisor cannot be located, the Multnomah County site supervisor can remove the device following steps "a" through "f;"
- h. Attachment A "Removal of a Lockout or Tagout Device by a Supervisor" must be completed each time a supervisor removes an employee's or contractor's device.

After the lockout or tagout devices have been removed, operate the energy

isolating device(s) to restore the equipment or machine to its normal operational condition.

H. Procedures Involving More Than One Person

OR-OSHA regulations allow for "group lockout or tagout." This system of employee protection may be used when a large group of employees is working on a piece of equipment.

Ideally, group lockout/tagout should not be used. Each employee working on a piece of equipment should place their own locks or tags on the energy-isolating device. There are devices available which will accommodate multiple locks or tags.

If group lockout/tagout is necessary, the lockout/tagout procedures described above should be used. In addition to these procedures, the following must also be done when using a group lockout/tagout:

1. Primary responsibility will be vested in one Authorized Employee for a set number of employees in the group lockout/tagout;
2. This Authorized Employee must verify that all employees working under them in the group lockout/tagout remain protected against machine startup;
3. If multiple entities (e.g. departments, contractors) are covered under the group lockout/tagout, one Authorized Employee will be responsible for coordinating the lockout/tagout activity for all entities to assure all employees are protected; and
4. Each Authorized Employee in the group lockout/tagout will place a personal lock or tag to the group lockout device when they begin work, and remove it when they are finished working on the equipment.

I. Special Rules Regarding Tags

Tagout devices may only be used when the energy-isolating device is not lockable. It is very important for employees to understand the differences

between locks and tags. The use of tags may give a false sense of security.

1. Tags are essentially a warning device only. They do not provide any type of physical restraint or energy isolation;
2. When tags are applied they must be signed and dated by the employee applying the tag and may not be removed by anyone except that employee;
3. Tags must never be bypassed, ignored, or otherwise defeated;
4. Tags must be legible and understandable by all employees and contractors who work in the area where the tags are used;
5. Tags must be uniform in color, size, and design so as to be easily recognized. Attachment D to this policy gives an example of acceptable tags;
6. Tags and their means of attachment will be durable and made of a material able to withstand the environmental conditions encountered in the workplace;
7. Tags must be securely attached to energy isolating devices so that they cannot be inadvertently detached during use;
8. Tag attachment devices must not be reusable. Nylon wire straps or other similar type devices will be used.

J. Training

All employees whose work is regulated by this section (lockout/tagout) will acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned under this section.

Training for affected and authorized employees will include:

- The purpose of energy-control procedures.
- How energy-control procedures are applied.
- How energy-control procedures will protect them.

Authorized employees who perform regular lockout/tagout will adhere to this procedure and require additional training. This training includes the following:

1. Recognition of applicable energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control;
2. The purpose and use of the lockout and tagout procedures;
3. OR-OSHA OAR437 division 2/J rules and this administrative procedure
4. The prohibition of attempts to restart or reenergize machines or equipment which are locked or tagged out;
5. When tagouts are used instead of lockouts, the following limitations of tags:
 - a. Tags are warnings and do not physically lock energy isolating devices, thus they may evoke a false sense of security. The meaning of the tag must be understood;
 - b. Tags can only be removed by the person who applied it, and that the tag is never to be ignored or bypassed;
 - c. Tags must be legible and understandable by all employees using them as well as affected employees.
6. Training will be provided upon initial assignment to the job. Retraining will be provided whenever there is a change in job assignments, a change in machines or equipment that present a new hazard, or when there is a change in energy control procedures. Retraining will also be conducted as part of the periodic assessment, and whenever site management has reason to believe that there are deviations from the established procedures.

K. Equipment Specific Procedures

Attachment B "Equipment Specific Lockout/Tagout Procedures" must be completed for each individual machine or piece of equipment that must be locked or tagged out if the equipment or machine:

1. Has the potential for stored or residual energy after shutdown;
2. Has the potential for reaccumulation of stored energy after shutdown;
3. Can be energized from more than one source;

4. Cannot be completely deenergized and deactivated by one energy source;
5. Needs more than one lockout device to lockout the equipment;
6. Has a lockout device that is not under the exclusive control of the authorized employee performing the maintenance;
7. Requires maintenance activities that may create hazards for other employees, even though the equipment is locked out.

The procedure can be maintained in any other written format as long as the information in Attachment B is covered.

L. Periodic Assessments

Periodic assessments will be conducted at least annually by site supervisors or their designate. The employees using lockout/tagout procedures will be interviewed during the assessments concerning their responsibilities.

Assessment records will include:

1. The identity of the machine or piece of equipment on which the lockout or tagout procedures were utilized;
2. The date of the assessment;
3. Names of employees who were included in the assessment;
4. Person performing the assessment.

Attachment C "Periodic Lockout/Tagout Assessment Form" will be used to document the assessments.

IV. RESPONSIBILITIES

A. The Risk Management Section has the following basic responsibilities:

1. Assist sites in developing specific lockout/tagout procedures;
2. Periodically review this Administrative Procedure to ensure it is up to date;
3. Assist sites in lockout/tagout training.
4. Assist sites in equipment specific procedure documentation.

B. Departments/Divisions

Departments/Divisions have the following basic responsibilities:

1. Implementing this Administrative Procedure at their facilities and/or for their employees;
2. Establishing equipment specific procedures where applicable;
3. Ensuring the appropriate Department/Division personnel are trained on the elements of the lockout/tagout program;
4. Interfacing with contractors regarding lockout/tagout procedures;
5. Ensuring procedures and practices are in place to protect personnel if they have to work on energized equipment or systems.

C. Employees

Employees have the following basic responsibilities:

1. Following all rules and directions regarding lockout/tagout procedures;
2. Not attempting to operate equipment that is locked or tagged out.

III. IMPLEMENTATION AND INTERPRETATION

Any questions relative to the intent or application of this procedure should be directed to the Risk Management Section who is responsible for interpreting and implementing this procedure.

(Attachments are on the following pages)

ATTACHMENT A
REMOVAL OF A LOCKOUT OR TAGOUT DEVICE BY A SUPERVISOR

POST UNTIL (Date): _____
(At least one shift, or until the affected individual returns to work, whichever is longer.)

DATE _____

SITE _____

SUPERVISOR WHO REMOVED DEVICE _____

EMPLOYEE WHOSE DEVICE WAS REMOVED _____

SUPERVISOR ATTEMPTED TO CONTACT EMPLOYEE (date, time method) _____

OTHER EMPLOYEES INVOLVED _____

EQUIPMENT INVOLVED _____

FULLY DESCRIBE THE CIRCUMSTANCES THAT NECESSITATED REMOVAL OF THE
LOCKOUT OR TAGOUT DEVICE _____

SUPERVISOR SIGNATURE _____

EMPLOYEE acknowledgement of personal lock removal: _____ Date: _____

ATTACHMENT B
EQUIPMENT SPECIFIC LOCKOUT/TAGOUT PROCEDURE

Machine or Equipment: _____

Names of Authorized Employees: _____

Type of Energy (e.g. Electric, Steam, Air)	Magnitude of Energy (e.g. Voltage, Temp., Pressure)	Type & Location of Energy Isolating Device(s) (e.g. Breaker, Valve)	Method(s) of Isolation (e.g. Lock on breaker, Chain and lock valve)	Steps Taken to Verify Isolation

Procedure Approved by: _____

Date: _____

ATTACHMENT C**PERIODIC LOCKOUT/TAGOUT ASSESSMENT FORM**

ASSESSOR: _____

DATE OF ASSESSMENT: _____

EMPLOYEE(S) BEING ASSESSED: _____

EQUIPMENT ASSESSMENT PERFORMED ON: _____

Was notification of affected employees completed prior to beginning lockout/tagout?

YES

NO

Were all sources of energy identified, controlled or relieved? Was this verified by activating equipment controls?

YES

NO

Were correct locks and/or tags used? If locks, were these specifically assigned to the employee?

YES

NO

Does the lockout or tagout device clearly identify who applied the device?

YES

NO

If testing of the equipment was required, did the employee effectively re-energize, de-energize, and return the equipment to the correct locked out or tagged out condition?

YES

NO

Did the employee correctly release the equipment from lockout or tagout?

YES

NO

YES NO All tools removed from equipment, and all equipment components intact?

YES NO Affected employees warned of equipment start-up?

YES NO Verified equipment operating controls in off or neutral position?

YES NO Removed the lockout/tagout device and energized equipment?

YES NO Notified affected employees of equipment status?

NOTES/COMMENTS/RECOMMENDATIONS:

ATTACHMENT D**EXAMPLE OF ACCEPTABLE TAGOUT DEVICES**

The following tags, or substantially similar ones, must be used when locking and/or tagging out equipment. These tags are available from safety supply vendors.

