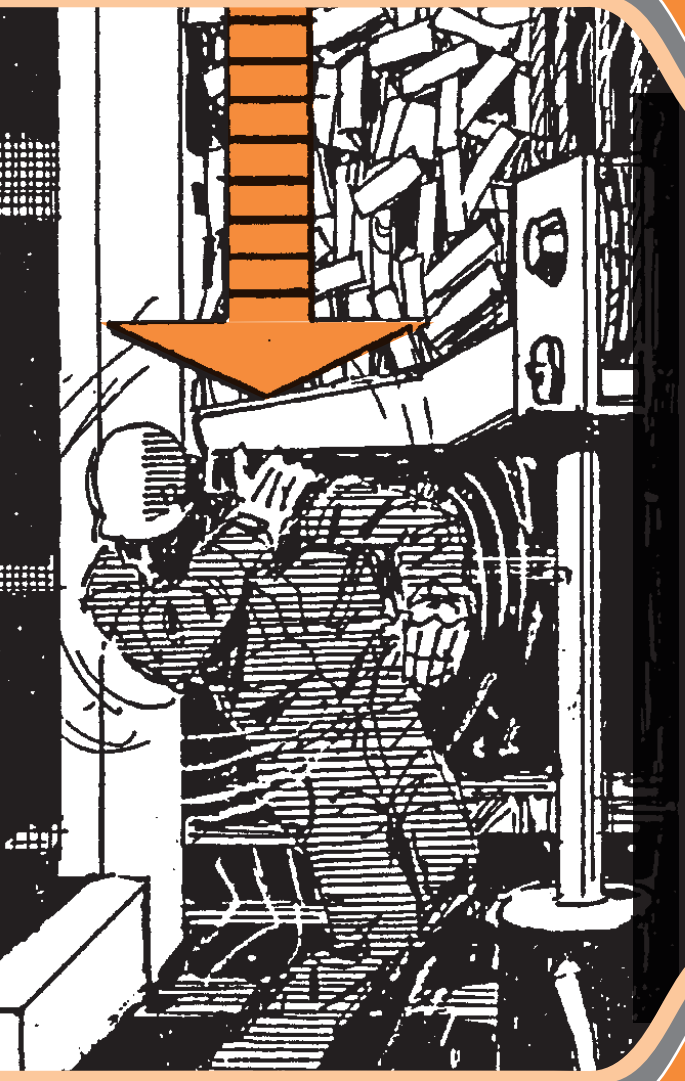
Hazardous Energy



Oregon OSHA's guide to controlling hazardous energy

About this document

A guide to controlling hazardous energy is a publication of the Oregon OSHA Standards and Technical Resources Section.

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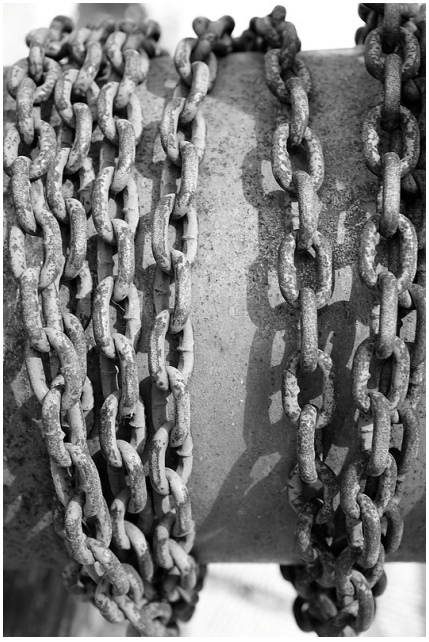
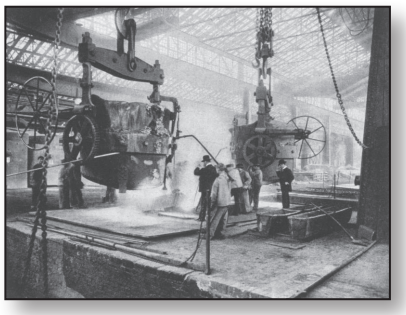
Oregon OSHA

CONTENTS



Introduction



You can't hear it. You can't see it. Hazardous energy stays silent and invisible until it's too late. Hazardous energy threatens if you do the following:

- Service or maintain equipment that could start or move unexpectedly.
- Work near equipment when it's being serviced.
- Supervise employees who service equipment or who work near equipment while it's being serviced.

This guide is based on the requirements in Oregon OSHA's standard for hazardous energy control — *Subdivision 2/J, 1910.147*, which protects employees who could be injured as a result of the unexpected release of hazardous energy. The requirements apply when an employee doing *service or maintenance work* on a machine or equipment could be injured by the unexpected start-up or release of hazardous energy. *Lockout* and *tagout* are the primary methods of controlling hazardous energy.

Service or maintenance includes erecting, installing, constructing, repairing, adjusting, inspecting, unjamming, setting up, trouble-shooting, testing, cleaning, and dismantling machines, equipment, or processes. **In this guide, equipment means equipment** *and* **machines.**

What you'll learn from this guide

- Why you should be concerned about hazardous energy.
- Safe practices for controlling hazardous energy.
- Key requirements of OR-OSHA's hazardous-energy-control standard — *Subdivision 2/J, 1910.147.*
- Other Oregon OSHA standards that have hazardous-energy-control requirements.

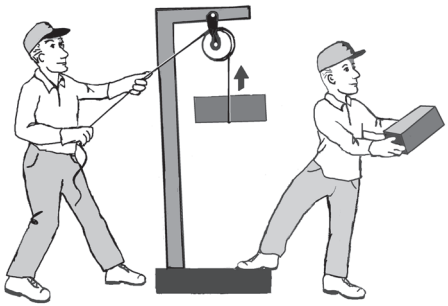
Remember: This guide will help you understand how to control hazardous energy and meet the requirements of 1910.147 — but it doesn't take the place of 1910.147.

Understanding hazardous energy

Energy and motion

Energy is the power for doing work. Energy exists in different forms (see the table on Page 3) but all forms are associated with motion. Tensioned objects such as suspended loads have potential energy — energy that has the potential for motion. Releasing the load converts potential energy to kinetic energy and causes the load to drop.

Tensioned objects have potential energy.



Moving objects have kinetic energy.

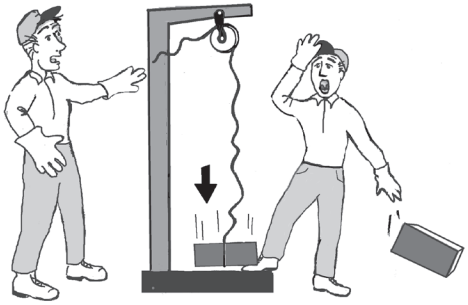


Illustration: Patricia Young, Oregon OSHA.

This forklift truck, raised for repair work, has potential energy.

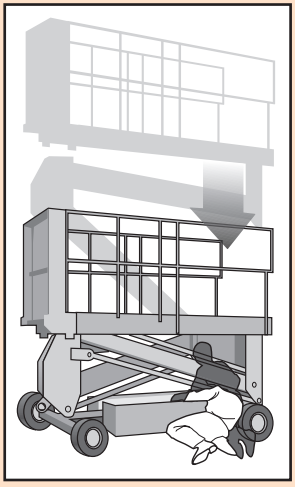
Forms of energy

Potential	Stored energy that can be drawn upon to do work. Suspended loads, compressed springs, and pressurized hydraulic systems are examples. Potential energy can be converted to kinetic energy and many of the other energy forms described below.
Kinetic	Energy resulting from moving objects such as released loads and uncoiling springs. When these objects are released, their potential energy is converted to kinetic energy.
Flammable	Energy converted from the combustion of gasses, liquids, solid chemicals, and vapors.
Chemical	The capacity of a substance to do work or produce heat through a change in its composition. Chemical energy can be converted from gasses, liquids, solid chemicals, and vapors.
Electrical	Energy generated through the conversion of other forms such as mechanical, thermal, or chemical energy. Energy stored between plates of a charged capacitor is an example of potential electrical energy. Typical electrical energy sources include open busbars, motors, and generators.
Thermal	Energy transferred from one body to another as the result of a difference in temperature. Heat flows from the hotter to the cooler body. Sources include mechanical work, radiation, chemical reactions, and electrical resistance.

How energy becomes hazardous

Energy in any form becomes hazardous when it builds to a dangerous level or is released in a quantity that could injure a worker. Hazardous energy is never far from those who need to service or maintain powered equipment. Simply turning the power off doesn't make the equipment safe! It's critical that those who service or repair equipment know how hazardous energy could harm them and how to control it.

Hazardous energy in the workplace: a recent accident



The son of the owner of a commercial drywall construction company, who was also an employee of the company, was preparing an aerial lift for a job and had replaced two battery terminals. He had raised the aerial boom and was reaching toward the battery compartment across the metal enclosure that houses the lift's toggle controls when the boom dropped and pinned him to the control panel. His father discovered him and summoned emergency responders but he died at the site.

Investigation findings

- The lift's emergency valve, hydraulic hoses and fittings, and electrical wiring were inspected after the accident and were not defective; however, the on/off key switch had been bypassed so that the operator could use the toggle switches without using the key.
- The battery charging system was missing a fuse that would stop the system from charging and the spring-loaded toggle switches that controlled the boom did not have guards to prevent accidental contact.
- The employee did not use lockout procedures while he was working on the lift and did not block the boom to prevent it from dropping.
- The owner had not reviewed the lift's instruction manual with the victim or other company employees.

- Although the company had more than 10 employees, it did not have a safety committee.

The accident resulted in the following violations:

437-001-0760 — The employer failed to ensure that employees did not remove or tamper with required safety devices.

1910.147(c)(4) — The employer did not develop, document, and require employees to use lockout procedures to control hazardous energy during maintenance work.

437-001-0765 — The employer had more than 10 employees but did not have a safety committee.

- Employers must establish a safety committee or hold safety meetings.

Controlling hazardous energy

To control hazardous energy, you have to prevent it from being transmitted from its source to the equipment that it powers. You can accomplish that by doing the following:

- Identify energy sources.
- De-energize equipment by isolating or blocking the energy sources.
- Dissipate potential (stored) energy that could affect the equipment.
- Lock out the equipment's energy-isolating device.
- Tag out the energy-isolating device only if you can't lock it out.

Identifying energy sources

Identify equipment in your workplace that needs service or maintenance. Determine the form of energy that powers the equipment, including potential energy that may remain when the energy source is disconnected. Label the energy sources so that workers will know what equipment is powered by each energy source.

De-energizing equipment

De-energizing equipment means isolating it from its energy source and controlling potential energy so that no energy can flow to the equipment. The method you use to de-energize equipment depends on the form of energy and the means available to control it. Safe practices for de-energizing equipment:

- Disconnect motors from the equipment.
- Isolate electrical circuits.
- Disconnect equipment from energy sources.
- Block the fluid flow in hydraulic, pneumatic, or steam systems with control valves or by capping or blanking the lines.
- Block equipment parts that could be moved by gravity.

Dissipating potential (stored) energy that can't be isolated

Stored energy must be released after equipment has been de-energized. Capacitors, coiled springs, elevated machine members, rotating flywheels, and air, gas, steam, chemical, and water systems are sources of stored energy. If the energy could return to a hazardous level, make sure that it remains isolated from the equipment until all service work is finished. Safe practices for dissipating potential energy:

- Vent pressurized fluids until internal pressure levels reach atmospheric levels.
- Discharge capacitors by grounding them.
- Release or block tensioned springs.
- Ensure that all moving parts have stopped completely.

Locking out or tagging out energy-isolating devices

Energy-isolating devices prevent energy from being transmitted from an energy source to equipment. Energy-isolating devices are the primary means for protecting those who service equipment. Examples (shown below) are manually operated electrical circuit breakers, main disconnect switches, and line valves and blocks.

Examples of locked out and tagged out energy-isolating devices

Main disconnect switch

Line valve

Circuit breaker

An energy-isolating device is effective only when no one can accidentally restart the equipment. *Locking out* is a procedure for securing an energy-isolating device in an off, closed, or neutral position. When an energy-isolating device is locked out, a worker can safely service hazardous equipment. A lockout device — typically a lock with a unique key or combination — secures the energy-isolating device in a safe position. When an energy-isolating device is locked out, the equipment it controls will not work until the lockout device is removed.

Similarly, *tagging out* is a procedure for placing a warning tag or sign — a tagout device — on an energy-isolating device. Tagout devices must control hazardous energy at least as effectively as lockout devices. But tagout devices don't provide the same physical barrier to hazardous energy as lockout devices, so it's harder to ensure that they are equally effective. A tagout device must be securely fastened to the energy-isolating device and must state that the equipment being serviced can't be operated until it is removed.

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

Durable. Lockout devices must work under the environmental conditions in which they are used. Warnings on tagout devices must be legible even in wet, damp, or corrosive conditions.

Standardized. Lockout and tagout devices must be designated by color, shape, or size. Tagout devices must have a standardized print and warning format.

Substantial. 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.

Identifiable. Any employee who sees a lockout or tagout device must recognize who attached it and understand its purpose. Each lock must have a unique key or combination; this means that only the employee who uses the lock has the key or the combination to that lock.

If you're an employer, you must provide lockout and tagout devices to employees who need to shut down equipment to service or maintain it.

When you replace, renovate, or modify equipment, ensure that the energy-isolating devices will accept lockout devices. New or renovated equipment (modified after Jan. 2, 1990) must be capable of being locked out.

Lockout or tagout? How to decide

If you can lock out an energy-isolating device, then you must lock it out before you service the equipment that it controls. If you can't lock out an energy-isolating device, then you must tag it out. Remember that you must ensure that the hazardous energy is controlled just as effectively with the tagout device as it would be with a lockout device.

Understanding energy-control procedures

You need to accomplish three critical activities to ensure employees' safety when they're servicing or working near equipment that could expose them to hazardous energy:

- Develop written procedures for controlling hazardous energy.
- Train employees in the procedures.
- Conduct inspections of the procedures at least annually.

Developing written energy-control procedures

You must document energy-control procedures for use by authorized employees who lock out or tag out equipment to perform service and maintenance. The procedures for equipment with one or more hazardous-energy sources must include the following:

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

When written procedures are not required

You do not need to document the procedures if accidents that involve unexpected activation or re-energizing of equipment have not occurred and the following conditions exist:

- A single source of energy can be readily identified and isolated.
- Locking out the energy source completely de-energizes and deactivates the equipment.
- The lockout device is under the exclusive control of the employee performing the service or maintenance.

- There is no potential stored or residual energy that could harm employees after shutdown.
- The service or maintenance work does not create hazards for other employees.

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. Lock out or tag out the energy sources.
6. Verify the equipment is isolated from hazardous energy and de-energized.

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

1. Remove tools and replace equipment components.
2. Inform co-workers about energy-control device removal.
3. Ensure all workers are clear of the work area.
4. Verify power controls are off or in a neutral position.
5. Remove the lockout or tagout device.
6. Re-energize equipment.

Common questions

What happens if I attach a lockout or tagout device but I'm not available to remove it? Your employer can authorize another employee to remove the device if that employee is trained to do so and follows a documented energy-control procedure. The procedure must ensure that you're not available to remove the device, that someone has tried to contact and inform you that another employee has removed the device, and that you know the device has been removed before you return to work.

How do I deal with locked-out or tagged-out equipment when work shifts change? You can adapt your energy-control procedures to shift changes as long as the procedures ensure that employees on all shifts are protected.

How do I deal with locked-out or tagged-out equipment after long-term shutdowns? You should also have an additional energy-control procedure to protect employees if they must restart equipment after long-term shutdowns. Determine who will be responsible for monitoring any lockout and tagout devices that control energy to the equipment. Include steps in the procedure for protecting employees if they need to remove or change parts while the equipment is shut down. Do not restart equipment until you are absolutely certain that it is working properly.

What if I contract service or maintenance on my equipment? You and the contractor must understand one another's lockout and tagout procedures. Review your contractor's energy-control program before the contractor does any on-site work. Your employees must also understand and comply with the contractor's energy-control program.

Do I need a lockout/tagout program when working on motor vehicles? You must ensure that vehicles, machinery, and equipment you are servicing are isolated from their energy source and made inoperable before doing any maintenance or repair work.

Training employees

All employees must be trained to know basic hazardous-energy concepts and the purpose of the devices used to control hazardous energy. They should also know what tasks might expose them to hazardous energy and how hazardous energy can be controlled.

Some employees need to know more about hazardous energy than others. What they need to know depends on whether they service the equipment or just work near the equipment while it's being serviced. Oregon OSHA uses the terms *authorized employees* for those who service equipment and *affected employees* for those who work in areas where the equipment is serviced.

Authorized employees lock out or tag out equipment and service or maintain the equipment. Required training:

- How to find and recognize hazardous energy sources.
- The types and magnitudes of energy used in the workplace.
- How to isolate energy sources.

Affected employees use equipment serviced under lockout or tagout procedures or work in an area affected by the procedures. An affected employee becomes an authorized employee when the employee performs service or maintenance work on the equipment. Required training:

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

Keep training records. Keep current training records for each authorized and affected employee. Document the employee's name and the training date.

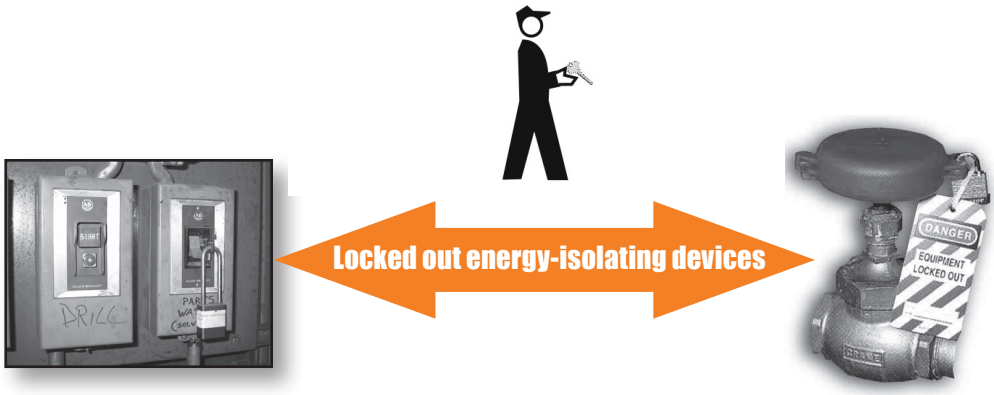
Retrain employees when work conditions change. Authorized and affected employees must be retrained whenever their job assignments change, energy-control procedures change, equipment or work processes present new hazards, or when they don't follow energy-control procedures.

Traditional lockout vs. group lockout

Traditional lockout

Recall that lockout means securing an energy-isolating device in an off, closed, or neutral position. Under traditional lockout, each authorized employee secures each energy-isolating device — typically with a lock as shown below. (An authorized employee is one who locks out or tags out the energy-isolating device and services the equipment.)

Traditional lockout with two energy-isolating devices



Each authorized employee places his personal lock on each energy-isolating device before beginning service work, then removes that lock after the work has been done. Service work involving many employees and many energy-isolating devices can make traditional lockout complicated.

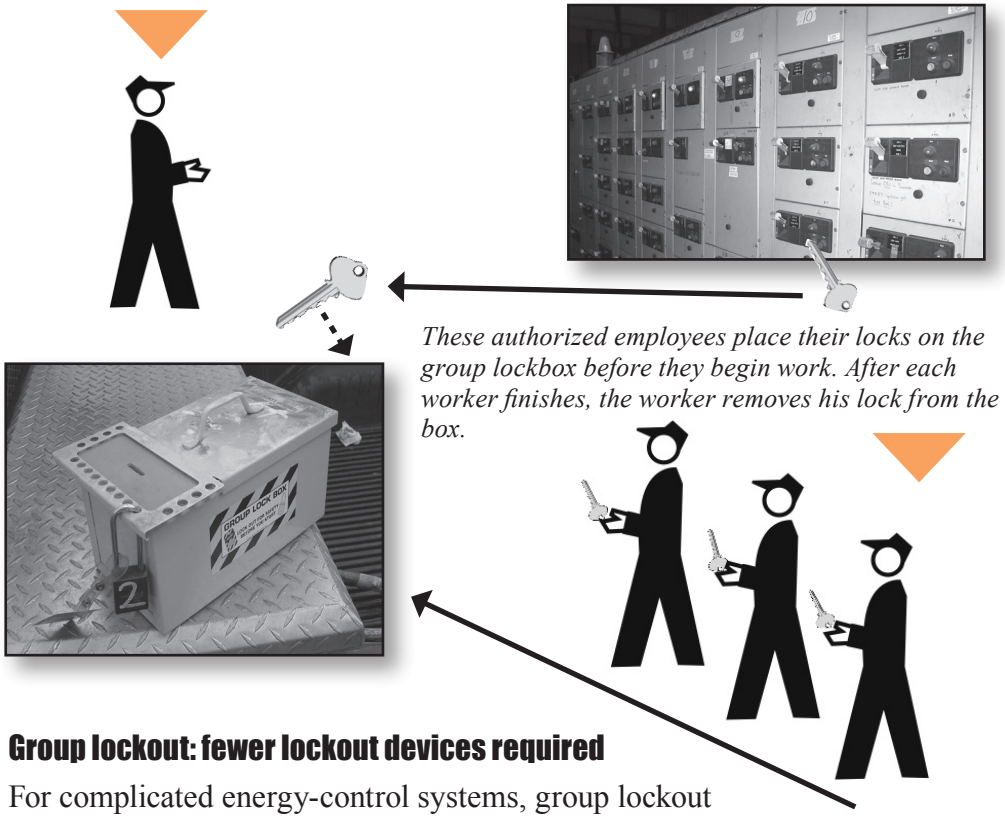
Group lockout

In many workplaces, however, a group of authorized employees may need to service equipment that has several energy sources and several energy-isolating devices.

Under group lockout, just *one* designated person in the group assumes responsibility for securing each energy-isolating device. There are a number of variations of group lockout; the *group lockbox variation* (see the illustration on Page 15) reduces the number of locks and makes it easier for employees to coordinate their activities.

Group lockout with multiple energy-isolating devices

This designated person locks out each of these energy-isolating devices and puts the key into a group lockbox with a multi-lock hasp.



These authorized employees place their locks on the group lockbox before they begin work. After each worker finishes, the worker removes his lock from the box.

Group lockout: fewer lockout devices required

For complicated energy-control systems, group lockout can reduce the number of lockout devices that employees must use.

Here's an example: Ten employees do maintenance on a machine that has five energy sources that need to be isolated.

- *Traditional lockout requires 50 locks.* (Each employee places a lock on each energy-isolating device.)
- *Group lockout requires 15 locks.* (A designated person in the group places a lock on each energy-isolating device. Each authorized employee places a lock on the group lockbox.)

Group lockout can also reduce the risk of injury for service and maintenance employees, contractors, and other affected employees who don't regularly work with complicated energy-control systems.

Example of a group lockout procedure — the group lockbox variation

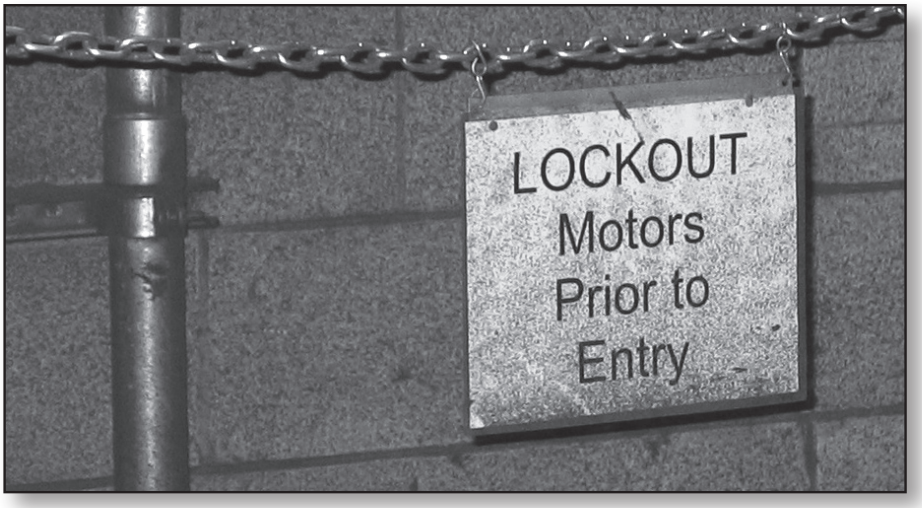
Step 1	A designated, authorized employee in the group secures each energy-isolating device with a personal lock.
Step 2	The same authorized employee places the key that fits each lock in a group lockbox with a multilock hasp.
Step 3	The other authorized employees in the group secure the lockbox — they attach their personal locks to the box — before beginning their service work.
Step 4	After each employee finishes service work on the equipment, that employee removes his personal lock from the lockbox.
Step 5	After all the employees have finished their service work and removed their personal locks from the lockbox, the authorized employee who placed the key in the box removes it.
Step 6	The authorized employee uses the key to remove the lock on each energy-isolating device.

Evaluating written energy-control procedures

An evaluation is an inspection of all written energy-control procedures by an authorized employee. The purpose of the inspection is to determine that employees are following the written procedure and that the procedure is correct. Either the employer or the inspector must document each inspection with the following information:

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

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



The authorized employee who does the inspection must understand the procedure and must not be among those following the procedure at the time of the inspection. Each procedure must be verified for its accuracy, completeness, and effectiveness in energy control.

Reviewing a lockout procedure. 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.

Reviewing a tagout procedure. 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.

Working by the rules

This section helps you determine which OR-OSHA rules you should follow to control hazardous energy at your workplace. Keep in mind the following:

- If you service equipment that could start or move unexpectedly, follow the requirements in *1910.147, The control of hazardous energy (lockout/tagout).*
- You may also need to comply with one or more of the other listed rules, depending on the nature of your work. For example, if you do repair work in a permit-required confined space, see *1910.146, Permit-required confined spaces.* If you do maintenance on a forging machine, see *1910.218, Forging machines.*
- If electricity is your primary hazard — for example, if you work on or near parts of fixed electrical equipment or circuits — follow the requirements in *1910.333, Work on or near energized circuits.*

Division 1 rules — all workplaces

Rules for all workplaces *437-001-0760*
The employer must ensure that employees are properly instructed and supervised in the safe operation of the machines, tools, equipment, and work processes that they are authorized to use.

Employees must stop machines or moving parts and properly tag out or lock out the starting control before oiling, adjusting, or repairing, except when the equipment has a means for oiling or adjusting that will prevent contact with moving parts.

Division 2 rules — general industries

The control of hazardous energy (lockout/tagout) *1910.147*
Employees who service equipment that could start or move unexpectedly due to uncontrolled hazardous energy. Develop written hazardous energy-control procedures. Train employees about hazardous energy concepts and procedures. Conduct periodic (at least annual) inspections of the procedures.

Permit-required confined spaces *1910.146*
Employees who enter permit-required confined spaces. Before employees enter, the space must be protected from hazards caused by the release of energy or material.

Vehicles for highway and road operation characteristics and maintenance *437-002-0223*
Employees who inspect, maintain, or repair vehicles with dump bodies. The dump body must have a permanently attached support device that can be locked in position to prevent accidental lowering. The employee doing service work must use the device to support the dump body when it is raised.

Forging machines *1910.218*
Employees who change dyes or do maintenance work on hydraulic forging presses. The hydraulic pumps and power apparatus must be locked out. The ram must be blocked so that it meets the criteria stated in this rule.

Stationary compactors, self-contained compactors, and balers *437-002-0256*
Employees who service equipment for refuse collection and compaction. Use a lockout device that will ensure hazardous energy is isolated from the equipment. Division 2, Subdivision J 1910.147 applies.

Bakery equipment *1910.263*
Employees who do service work on cooling towers. Cooling towers that extend two or more floors must have a lockout switch on each floor so employees can lock the mechanism and prevent it from starting.

Employees who do service work on or inside ovens. The equipment must have a main disconnect switch or circuit breaker that employees can reach quickly and safely. The main switch or circuit breaker must be locked in the open position when an employee works on or inside an oven.

Electric power generation, transmission, and distribution *1910.269*
Employees who service equipment that could start or move unexpectedly. Develop hazardous-energy-control procedures. Train employees about hazardous-energy concepts and procedures. Conduct periodic (at least annual) inspections of the procedures.

Grain-handling facilities *1910.272*
Employees who enter grain-storage structures. Mechanical, electrical, hydraulic, and pneumatic equipment must be de-energized and disconnected, locked out and tagged out, blocked off, and prevented from operating.

Employees who enter flat grain-storage structures. Augers and other equipment must be de-energized and disconnected, locked out and tagged, blocked-off, and prevented from operating.

Employees who do preventive maintenance on equipment. Follow lockout and tagout procedures that isolate hazardous energy from the equipment being serviced.

Pulp, paper, and paperboard mills *437-002-0312*
Employees who service equipment that could start or move unexpectedly (including continuous barking drums, tanks, digesters, beaters, pulpers, stock chests, and drives). Follow the requirements in 1910.147 and 437-002-0312 for controlling hazardous energy to continuous barking drums, tanks, digesters, beaters, pulpers, and stock chests, and drives.

Sawmills *1910.265*
Employees who do service work on equipment supported by hydraulic pressure. Block, chain, or secure equipment normally supported by hydraulic pressure before beginning the work.

Textiles *1910.262*
Employees who do service work on looms. The loom must be prevented from being started while the employee is servicing it.

Employees who enter J-boxes. Each valve controlling the flow of steam, hazardous gases, or liquids into a J-box must have a chain, lock, and key, so that the employees can lock out the valve.

Employees who enter kiers. Each valve controlling the flow of steam, hazardous gases, or liquids into a kier must have a chain, lock, and key, so that employees can lock out the valve.

Work procedures *437-002-0310*
Employees who service chipper equipment. Follow the requirements in 1910.147 to prevent accidental restarting of equipment that has been shut down for adjustment or repair. This rule applies to tree and shrub services.

Selection and use of work practices *1910.333*
Employees who do service work on or near parts of fixed electrical equipment or circuits. The equipment parts or circuits must be de-energized and the circuits energizing the parts must be locked out or tagged out.

Division 3 rules — construction

Concrete, concrete forms, and shoring; requirements for equipment and tools *1926.702*
Employees who service equipment that could start unexpectedly, such as compressors, mixers, or pumps used for concrete and masonry construction. Before servicing the equipment the employee must ensure that is it locked out and tagged out.

Conveyers *1926.555*
Employees who service conveyers. The employees must ensure that the conveyer is locked out and tagged out with a "Do not operate" tag.

Division 4 rules — agriculture

The control of hazardous energy (lockout/tagout) *430-004-1275*
Employees who service equipment that could start or move unexpectedly. Develop hazardous-energy-control procedures. Train employees about hazardous-energy concepts and procedures. Conduct periodic (at least annual) inspections of the procedures.

General equipment guarding *430-004-1910*
Instruct employees on their initial assignments about the safe operation and servicing of equipment they use. Employees who do service or maintenance work must follow the requirements in 437-004-1275.

Division 7 rules — forest activities

Securing Machines *437-007-0725*
Machine operators. Before the operator leaves the operator's work station, procedures must be implemented to prevent the release of stored energy, accidental start up, or movement of the machine.

Employees who service and maintain machines. Follow the requirements of Subdivision 2/J 1910.147 when it is necessary to control hazardous energy to service and maintain machines.

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 work. An affected employee becomes an authorized employee when that employee's duties include service or maintenance work on equipment.

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

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

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 startup of equipment.

Lock out Placing a lockout device on an energy-isolating device as part of 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.)

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

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.

Tag out Placing a tagout device on an energy-isolating device as part of 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.

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.

Notes:

Oregon OSHA Services

Oregon OSHA offers a wide variety of safety and health services to employers and employees:

Consultative Services

- Offers no-cost on-site safety and health assistance to help Oregon employers recognize and correct workplace safety and health problems.
- Provides consultations in the areas of safety, industrial hygiene, ergonomics, occupational safety and health programs, assistance to new businesses, the Safety and Health Achievement Recognition Program (SHARP), and the Voluntary Protection Program (VPP).

Enforcement

- Offers pre-job conferences for mobile employers in industries such as logging and construction.
- Provides abatement assistance to employers who have received citations and provides compliance and technical assistance by phone.
- Inspects places of employment for occupational safety and health hazards and investigates workplace complaints and accidents.

Appeals, Informal Conferences

- Provides the opportunity for employers to hold informal meetings with Oregon OSHA on concerns about workplace safety and health.
- Discusses Oregon OSHA's requirements and clarifies workplace safety or health violations.
- Discusses abatement dates and negotiates settlement agreements to resolve disputed citations.

Standards & Technical Resources

- Develops, interprets, and provides technical advice on safety and health standards.
- Provides copies of all Oregon OSHA occupational safety and health standards.
- Publishes booklets, pamphlets, and other materials to assist in the implementation of safety and health standards and programs.
- Operates a Resource Center containing books, topical files, technical periodicals, a video and film lending library, and more than 200 databases.

Public Education & Conferences

- Conducts conferences, seminars, workshops, and rule forums.
- Coordinates and provides technical training on topics such as confined space, ergonomics, lockout/tagout, and excavations.
- Provides workshops covering management of basic safety and health programs, safety committees, accident investigation, and job safety analysis.
- Manages the Safety and Health Education and Training Grant Program, which awards grants to industrial and labor groups to develop training materials in occupational safety and health for Oregon workers.

For more information, call the Oregon OSHA office nearest you.

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Oregon OSHA

DEPARTMENT OF CONSUMER & BUSINESS SERVICES

Oregon OSHA

440-3326 (12/09/OR-OSHA)