



# Lockout/Tagout

## Guidelines for control of hazardous energy sources

### Introduction

When it is time for maintenance, repairs or retooling of a machine, simply turning the machine off or unplugging it while it is being worked on does not give enough protection for workers. Many serious accidents happen when someone thought the machine or all of the energy was safely turned off.

The Federal Occupational Safety and Health Administration (OSHA) and the Oregon Occupational Safety and Health Division (OR-OSHA) have adopted a standard for locking out and tagging out equipment for all Oregon employers. It is known as 29 CFR 1910.147, and it presents a minimum performance standard for the control of hazardous energy. This lockout/tagout standard covers all situations where the energization, start-up, or release of stored energy from machines or equipment could cause injury to employees.

The standard further establishes minimum requirements to control this hazardous energy and then describes the exact steps that must be taken whenever lockout/tagout is to be performed. This particular lockout/tagout standard applies to all Oregon industries, except special electrical utility installations or gas and oil well drilling and servicing.

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This publication provides practical loss control and safety information to assist you in making your workplace safer. It is not legal advice. SAIF Corporation has made every effort to bring significant Oregon Occupational Safety and Health Administration (OR-OSHA) regulations to your attention. Nonetheless, compliance with OR-OSHA remains your responsibility. You should read and understand all relevant OR-OSHA regulations that apply to your job site(s). You may want to consult with your own attorney regarding aspects of OR-OSHA that may affect you.

**Note:** The information in this publication is time sensitive. Do not rely upon this document if its publication date is more than three years old. Please check the Employer Guide "Safety" section of our web site at [www.saif.com/employer](http://www.saif.com/employer) for a more recent, printable copy. You'll also find a variety of other valuable safety information designed to help your business prevent injuries and control costs.

These guidelines take each major section of the standard and describe what must be done to have an acceptable lockout/tagout procedure.

Lockout/tagout rules cannot stop serious accidents by themselves. It is the employer and the employees who are committed to safety and health in the workplace, and who follow strict procedures that will prevent these serious accidents. SAIF Corporation believes that a lockout/tagout program is a positive step toward providing a safer and healthier workplace.

## Definitions

### **Affected employee.**

An employee whose job requires operation or use of a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires work in an area in which such servicing or maintenance is being performed.

### **Authorized employee.**

A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section.

### **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.

### **Energized.**

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

### **Energy-isolating device.**

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.

### **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.

### **Lockout.**

The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy-isolating device and 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 device in a safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.

### **Normal production operations.**

The utilization of a machine or equipment to perform its intended production function.

### **Servicing and/or maintenance.**

Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or un-jamming of machines or equipment, and making adjustments or tool changes, where the employee may be exposed to the unexpected energized or startup of the equipment or release of hazardous energy.

### **Setting up.**

Any work performed to prepare a machine or equipment to perform its normal production operation.

### **Tagout.**

The placement of a tagout device on 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 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 the tagout device is removed.

## Purpose

The purpose of a Lockout/Tagout Program is to isolate energy sources or dissipate stored energy during maintenance operations so that equipment cannot cause injury. Although a Lockout/Tagout Program is most commonly associated with electrical energy, other potentially harmful energy sources include hydraulic and pneumatic pressure, spring tension and gravity.

## Real World Scenarios

**Situation:** An employee is replacing the belt on a compressor, which is hardwired into a junction box. Before working on the compressor, he shuts off the power disconnect, which is in the next room. Another worker walks past the disconnect and notices it is off. He needs to use the compressor so he flips the switch on. The activated compressor immediately starts up, en-tangling the first employee's thumb in the pulley.

**Solution:** A lockout device applied to the disconnect would have prevented this accident.

**Situation:** An equipment operator has nearly completed digging a short trench with a backhoe. He is signaled by another worker to come answer a question on the company radio. He leaves the bucket raised, and turns off the equipment...he'll be back in just a moment. Meanwhile, another worker jumps in the trench to take some quick measurements. The equipment operator returns, jumps in the backhoe seat and accidentally bumps the control lever releasing hydraulic pressure. The bucket drops on the worker in the trench.

**Solution:** Moving the backhoe back from the trench and lowering the boom and bucket to the ground prior to leaving the equipment would have prevented this accident.

## Steps to a successful lockout/tagout program

### **I. Inventory All Machines or Equipment That May Need Servicing or Maintenance**

It may help you to first list all of the pieces of equipment or machines that need servicing or maintenance. Identifying which of these machines could release unexpected energy or start-up and cause injury to workers if the machines were not locked or tagged out is the first step. To determine which machines may need maintenance or repair and are hazardous under those conditions, you should talk to your maintenance staff or the people who operate the equipment. The following is a partial list of typical conditions which require the lockout procedures:

1. Anytime repair or work is being done on electrical circuits.
2. Whenever moving parts of machinery or equipment must be cleaned or oiled, or wherever accidental contact with moveable parts is possible.
3. When it becomes necessary to remove jammed parts or to clear blocked mechanisms.
4. When working on pipes which contain hazardous substances or high pressure lines.
5. Any situation that would require maintenance staff, electricians, millwrights or pipe-fitters to work on potentially hazardous equipment.
6. Locking out power to equipment in order to prevent use by unauthorized persons.

### **II. Energy Control Program**

The OR-OSHA lockout/tagout regulations became effective March 1, 1990. This standard requires an employer to establish a program consisting of an energy control procedure, employee training, and periodic inspections. This combination of obligations for an employer will provide employees an understanding of devices and methods of application, and removal of locks and tags so that controls are uniformly and safely used each time.

In Oregon, all locks must be unique and OR-OSHA does NOT permit group lockout. Although the regulations highly recommend that lockout be the procedure used the majority of the time, it does provide for the use of tags if the energy-isolating device is not capable of being locked out. However, if tags are used in lieu of locks, then a different set of training must be given to the employees.

Effective March 1, 1990, if any major replacement, repair or modification to machines or equipment occurs, or whenever new machines or equipment are installed, there must be energy-isolating devices capable of accepting lockout devices for the machines.

### **III. Energy Control Procedure**

These regulations are very concise and require you to document or write out your procedures for lockout/ tagout. These procedures are to specify the scope, purpose, authorization, rules, and techniques that are to be utilized by your employees for the control of hazardous energy. The procedure also must contain a means to assure compliance with your company's program. Consequently, the procedure will contain:

1. A specific statement of intended use.
2. Specific procedural steps for shutting down, isolating, locking and securing machines or equipment to control hazardous energy.
3. Specific procedural steps for the placement, removal and transfer of lockout devices or tagout devices.
4. The employee(s) responsible for the lockout devices.
5. Specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices, tagout devices and other energy control measures.

### **IV. Protective Materials and Hardware**

A lockout device, by definition, utilizes a positive means such as a lock or chain, either key or combination type, to hold an energy-isolating device in the safe position. Each person's lock must have either a key or combination which is unique to that device. The user must have the only key to each lock(s) or only the user may have the combination to each lock (Oregon initiated rule).

As an employer, you must provide these locks or tags. They must be uniquely and singularly identified and can only be used for controlling energy and for no other use. The locks and tags must be durable enough to withstand all types of environmental conditions, including corrosive atmospheres or exposure to weather.

All the locks and tagouts provided must be standardized. This means that they must be the same size, shape or color. Print and format must be standardized for tagout devices.

## **V. Periodic Inspection**

Once you have an energy control procedure, you must check it at least once a year to make sure it is being followed and that it meets your required expectations. The inspections should include visual observations and interviews of the workers involved in the lockout/tagout program. The person who does the periodic inspection should not be involved in the actual lockout/tagout program.

After the inspection is completed and employees have been interviewed and you have found the program meets your expectations, then a written certificate of the inspection must be made and maintained.

## **VI. Training and Communication**

All employees who work in a facility where a lockout/ tagout program may be utilized must receive information about the work site lockout/tagout program.

Those workers who are directly involved in the lockout/tagout procedure must receive additional information and training. The training must cover the particular hazards involved in the equipment or machines and the steps that must be followed during the lockout/tagout procedure.

Workers responsible for the lockout/tagout program are known as authorized employees. Their training includes recognition of hazardous energy sources, types and magnitude of the energy available in the workplace, and the methods and means necessary for control and isolation of that energy. These trained, authorized employees will then have a level of knowledge and skills that are required for the safe application, usage, and removal of energy controls as required by your energy control program.

Affected employees or those employees who work with the equipment or machines that must be repaired or maintained shall receive a level of training or instruction detailing the purpose and use of the energy control procedures.

All other employees who work in an area where energy control procedures are utilized must be instructed about the procedures, but most importantly about the provisions relating to restoration or re-energization of the machines or equipment which are locked or tagged out. When tagout systems are used instead of lockout systems, it is very important that employees understand that tags may give a false sense of security. Consequently, their meaning needs to be fully understood as a part of the overall energy control program. The following must also be given in employee training when only tags are used.

1. Tags are essentially a warning device only. They do not provide any type of physical restraints or energy isolation.

2. When tags are applied, they are not to be removed without authorization of the person responsible for it.
3. Tags must never be bypassed, ignored or otherwise defeated.
4. Tags must be legible and understandable by all authorized employees and affected employees who work in the area where the tags are utilized.
5. Tags shall be made of material that can withstand environmental conditions encountered in the workplace.
6. Tags must be securely attached to energy-isolating devices so that they cannot be inadvertently or accidentally detached during use.

### **VII. Employee Retraining**

At times retraining may need to occur, based on a number of extenuating circumstances. One would be if the energy control procedures changed or a new hazard was introduced into the work environment because of a change in machines or equipment or job assignments. Retraining may also be necessary if, after the periodic inspection, deficiencies are found in the work practices involved in following the procedure.

Remember that training is supposed to establish employee proficiency in the use of the energy control procedure. At the end of training and retraining, the employer must certify that an employee has accomplished the training.

### **VIII. Notification of Employees of Energy Isolation**

When lockout or tagout is being performed, it should be done only by authorized employees, and those authorized employees shall notify the affected employees of either the application or removal of a lockout/tagout device. Notification shall be given before the de-energization lockout/tagout devices are applied and after they are removed from the machine or equipment.

### **IX. Outside Contractors**

Outside contractors who come into your facility to do work must be told about and given your lockout/tagout procedure. We recommend:

1. Written copies of the respective lockout/tagout program will be provided to all parties involved.
2. Specific program differences identified with specific tasks to be undertaken and anticipated conflicts resolved.

3. Communicate the collaborated procedures to all employees who will be working in the area of the locked or tagged out equipment.
4. Work Authorization Permit signed by respective management or authorized employees from each of the involved parties. This permit shall be in written form and will require a checklist of all required actions. Each party shall retain a copy of the signed permit until the end of the job exposure.

## **X. Resources**

SAIF Corporation publishes a companion piece to this guide entitled "Lockout/Tagout Safety Challenges", SC141. It is a practical step by step resource for implementing an effective program. It is available in both English and Spanish.

A copy of OAR 437, Division 2, Subdivision J, "The Control of Hazardous Energy (Lockout/Tagout)", including a model program, may be obtained from Oregon Occupational Safety and Health Division (OR-OSHA) by contacting them at:

Address: 350 Winter St NE, Salem, OR 97301

Telephone: 503.378.3272 or 800.922.2689

Webpage: [www.orosha.org](http://www.orosha.org)

OR-OSHA also publishes two additional publications on this topic:

- (1) "Oregon-OSHA's Guide to Controlling Hazardous Energy"
- (2) "Oregon-OSHA Fact Sheet, Lockout/Tagout"

Federal OSHA provides additional resources. Two websites that provide detailed information are:

- (1) [www.osha.gov/SLTC/controlhazardousenergy/index.html](http://www.osha.gov/SLTC/controlhazardousenergy/index.html)
- (2) [www.osha.gov/dts/osta/lototraining/index.htm](http://www.osha.gov/dts/osta/lototraining/index.htm)

# Model procedure for lockout/tagout program

## **(COMPANY NAME) - LOCKOUT/TAGOUT PROCEDURE**

**(Company Name)** has established this lockout/tagout procedure to provide the maximum protection to our employees whenever they must isolate machines or equipment from energy sources and to prevent unexpected energization, start-up or release of stored energy that could cause them injury. This procedure shall be used by all employees assigned to service or maintain our equipment in order to ensure that the machines or equipment are isolated from all potentially hazardous energy and locked out or tagged out before they perform any of the servicing or maintenance activities.

### **Equipment Identification**

**(Company Name)** has identified the following equipment to be included in the lockout/tagout program:

#### **(EXAMPLE)**

1. XY punch press
2. Atlas automatic welder
3. B-2 re-winder

Each of these pieces of equipment must be locked out or tagged whenever they require service or maintenance. Specific lockout procedures for each of these pieces of equipment are found in our safety procedures manual.

If you are responsible for lockout/tagout as one of **(Company Name)** employees, you will receive special training on how to effectively utilize lockout/ tagout. It is your responsibility as a trained employee to follow this procedure. You will also be provided with your own lock, tag and key. No other person shall be allowed access to your key or your lock. No one is allowed to remove your lock except yourself.

### **Periodic Inspection**

**(Company Name)** has designated **(employee name)** as the person who will conduct periodic inspections to see that the provisions of the company's Lockout/ Tagout Program are being followed. These periodic inspections or visual audits will be unannounced and carried out during the lockout/tagout process. We shall also make written records of these inspections and the findings of these inspections will be kept in the general manager's office.

## **Contractors**

When we hire outside contractors to come into our facility to work on our machines and equipment, their activities may create hazards which normally are not present to our regular employees. A copy of our plant procedures will be given to that contractor and a mutually agreed upon procedure established concerning the lockout/tagout devices that will be used to protect our employees and the contractor's workers.

This coordination will help ensure that our employees know what kind of work is to be performed, where and when it is to be performed, and how they are being protected.

All of our equipment shall be locked out or tagged out to protect against accidental or inadvertent operations when a start-up of that equipment could cause injury to any of our employees.

## **Responsibility**

The following employees have been selected to carry out our lockout/tagout procedure.

(Name/Job Title)

- 1.
- 2.
- 3.

These authorized employees who are responsible for the lockout/tagout procedure shall receive specialized training in the use of the lockout/tagout procedures.

Those employees who are affected by our lockout/tagout shall also receive instruction about the significance of the lockout/tagout procedure. Each new or transferred affected employee shall receive the same type of instructions.

## **Preparation For Lockout or Tagout**

**(Company Name)** has surveyed our facility and identified all of the isolating devices such as switches, or electrical circuits that must be locked or tagged out. Since some of our pieces of equipment have more than one type of energy source that must be isolated (electrical, mechanical or hydraulic), the following lists the specific piece of equipment followed by the type of energy source, and the location of the energy-isolating means. (See chart at the top of page 11 for examples from several different industries.)

Equipment	Energy Source	Stored Energy to be Relieved or Isolated	Location of Isolating Means
XY Punch Press	Main Circuit Breaker	Hydraulic, Electric, Mechanical Punch Ram, and Fly Wheel	Individual locks in the Equipment Cabinet
Sundstrand milling machine	South Breaker box	Electrical, Hydraulic	Individual locks in the shop supervisor cabinet
Hula Saw	Mill's Secondary Circuit Breaker	Electrical	Tags from the lockout/tagout cabinet

### Sequence for a Lockout or Tagout System Procedure

The lockout procedure must be conducted in the following manner. No deviations will be tolerated.

1. The authorized employee shall notify the affected employees that our lockout/tagout system is to be used.
2. If a particular piece of equipment is operating, it must be shut down by normal stopping procedure (by depressing the stop button or opening the toggle switch).
3. The authorized employee must operate the switch, valve or other energy-isolating device to make sure the equipment is isolated from its energy source. Stored energy, such as the energy found in springs, rotating fly wheels, hydraulic systems or compressed air or gas lines, must be dissipated or restrained by either repositioning, blocking or bleeding down.
4. The authorized person shall lock out and tag out the energy isolating device of the equipment or machines with their individual assigned lock.
5. After ensuring that no personnel are exposed, the authorized person shall complete another check to make sure that all of the energy sources have been disconnected.
6. The authorized person should then once again operate the push button or other operating controls to make certain the equipment will not operate.

**(CAUTION:** Return operating controls to neutral or off position after test.)  
For equipment that cannot be locked out, a tag will be used in those cases. The tagout device must be attached on or as close as possible to the energy-isolating device. The tag must clearly indicate that the operation or start-up of the energy-isolating device from the safe or off position is prohibited.

### **Equipment Testing Under Lockout/Tagout**

At times, some of our equipment must be tested while we are doing maintenance or repair. The following procedure must be followed under those conditions:

1. Clear the machine or equipment of all tools and materials that are non-essential items.
2. Make sure that all of the employees are clear of the machine or equipment and notify them that the machine will be energized.
3. The authorized employee shall remove the lock.
4. Energize and proceed with the testing or positioning.
5. De-energize all systems, complete the shut down procedures and the sequences for initial lockout/tagout before continuing any maintenance or service.

### **Removal of Lockout or Tagout Devices**

When the authorized employee has completed his/her work, then the lockout device or tag can be removed. The following procedure will be followed during that process:

Once again the authorized person shall inspect the work area to make sure that all tools have been removed from the machine. Notify all affected persons that the equipment is to be restarted. The authorized employee is the only person who shall remove the lockout or tagout device.

### **Locks and Tags**

**(Company Name)** has decided that all locks used in the Lockout/Tagout Program will be a uniform color. Each authorized employee has been assigned their own lock and tag, and their names have been placed on those locks. The locks have been selected for their durability to withstand all of the various types of environments in which they may be used.

It is the responsibility of each authorized employee who has been assigned a lock to assure that the locks are not misused. If the locks become damaged in any way, immediately seek a replacement lock.

Our tagout devices are also of uniform size and shape and when applied, they must contain a date of application, the name of the authorized worker, the equipment that is being de-energized, and the name of the supervisor in charge. Each of our tagout devices also has a generic warning on it, such as **"DO NOT START,"** and **"DO NOT ENERGIZE"**.

## Sample Lockout/Tagout Program Checklist

Yes	No	Checklist
<input type="checkbox"/>	<input type="checkbox"/>	Have we prepared a list of all pieces of equipment or machinery that could release unexpected energy or start up and cause injury to a worker?
<input type="checkbox"/>	<input type="checkbox"/>	Have we developed a written Energy Control Program consisting of an energy control procedure and an employee training program?
<input type="checkbox"/>	<input type="checkbox"/>	Do our energy control procedures specify the scope, purpose, authorization, rules and techniques that are to be utilized by employees for the control of hazardous energy?
<input type="checkbox"/>	<input type="checkbox"/>	Have we provided the necessary lockout/tagout devices which comply with the standards as outlined in the lockout/tagout rules?
<input type="checkbox"/>	<input type="checkbox"/>	Have we provided and documented training to all authorized and affected employees to ensure that the purpose and function of the energy control program is understood?
<input type="checkbox"/>	<input type="checkbox"/>	Have we established a periodic inspection of the energy control procedure to be conducted at least annually and designated the person to conduct the inspection?
<input type="checkbox"/>	<input type="checkbox"/>	Have we developed a procedure for employee retraining should the energy control procedure change, new hazards arise, or deficiencies in the procedures be found?

## Shutdown Procedures

List in order the steps necessary to shut down and de-energize the equipment. You must be specific. For stored energy, be specific about how the energy will be dissipated or restrained.

Procedure	Lock Type and Location	De-Energized State to be Verified? Yes, No, How?
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10		
.		

**Notify All Affected Employees When This Procedure Is In Application.**

## Start Up Procedure

List the steps necessary to reactivate or energize the equipment. Ensure during each step that personnel are clear before any testing or activation. Make sure all equipment that was used in the servicing or maintenance is cleared away before starting.

Procedure	Energy Source Activated	Notified All Affected Employees (See Affected Employee list)
1.		
2.		
3.		
4.		
5.		
6.		

Notify all affected employees when this procedure is in application.

**Procedures for operations and/or service and/or maintenance where lockout cannot be utilized:**

Alternate Procedure/ Protection Developed – Operation Name	Yes	No	Type - JSA, Tagout, Etc.
1.			
2.			
3.			
4.			
5.			
6.			
7.			

## Affected and Authorized Employees

List each person affected by this procedure and those authorized to use this procedure.

Authorized Employee Names	Occupation/Job Title
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____
9. _____	_____
10. _____	_____

Affected Employee Names	Occupation/Job Title
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____
9. _____	_____
10. _____	_____

# Periodic Lockout Inspection Questionnaire

Inspector: \_\_\_\_\_ Date of Inspection: \_\_\_\_\_

Inspection Location - Machine: \_\_\_\_\_

Equipment: \_\_\_\_\_

Authorized Employee (name): \_\_\_\_\_

Adequate Notification Given: Yes \_\_\_\_\_ No \_\_\_\_\_

Locks/Tags: Describe the type used and adequacy:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Isolation of Hazardous Energy Source: \_\_\_\_\_

Testing Equipment: \_\_\_\_\_

Locks Removed: Yes \_\_\_\_\_ No \_\_\_\_\_

Re-start Notification: Yes \_\_\_\_\_ No \_\_\_\_\_

**Comments:**

# Employee Training Attendance List

Instructor: \_\_\_\_\_

Training Session Date: \_\_\_\_\_

This roster confirms that the following employees attended the required lockout/tagout training.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
11. \_\_\_\_\_
12. \_\_\_\_\_
13. \_\_\_\_\_
14. \_\_\_\_\_
15. \_\_\_\_\_
16. \_\_\_\_\_
17. \_\_\_\_\_

# Lockout/Tagout Inspection Certification Log

This log is intended as a check of the inspection procedures in use at this facility. After reviewing the Periodic Lockout Inspection Questionnaire, I certify that these procedures have been complied with:

Name: \_\_\_\_\_ Title: \_\_\_\_\_

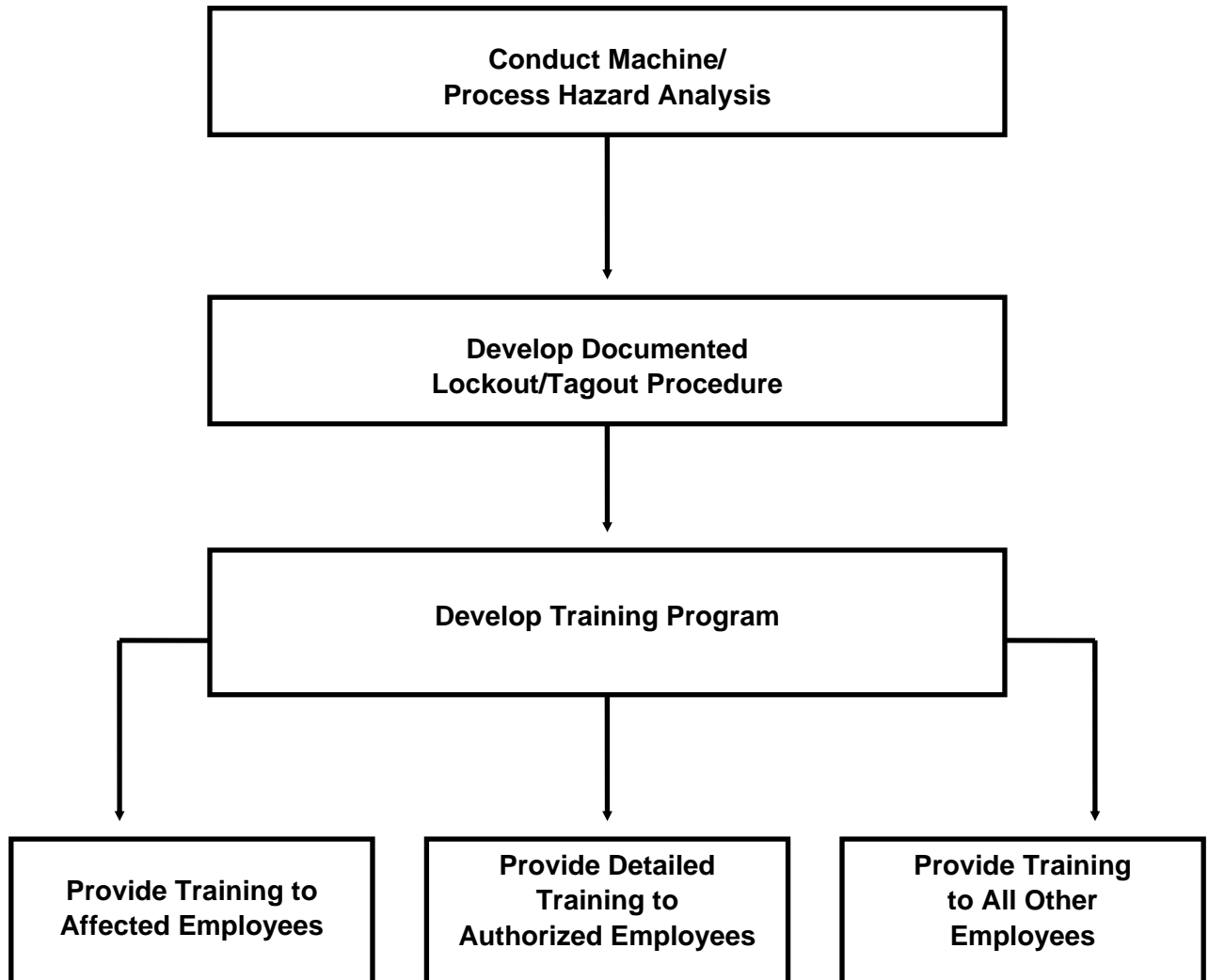
Machine or Equipment Location	Date of Inspection	Employees included in inspection	Person Performing Inspection	Comments

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

# Developing a Lockout/Tagout Program

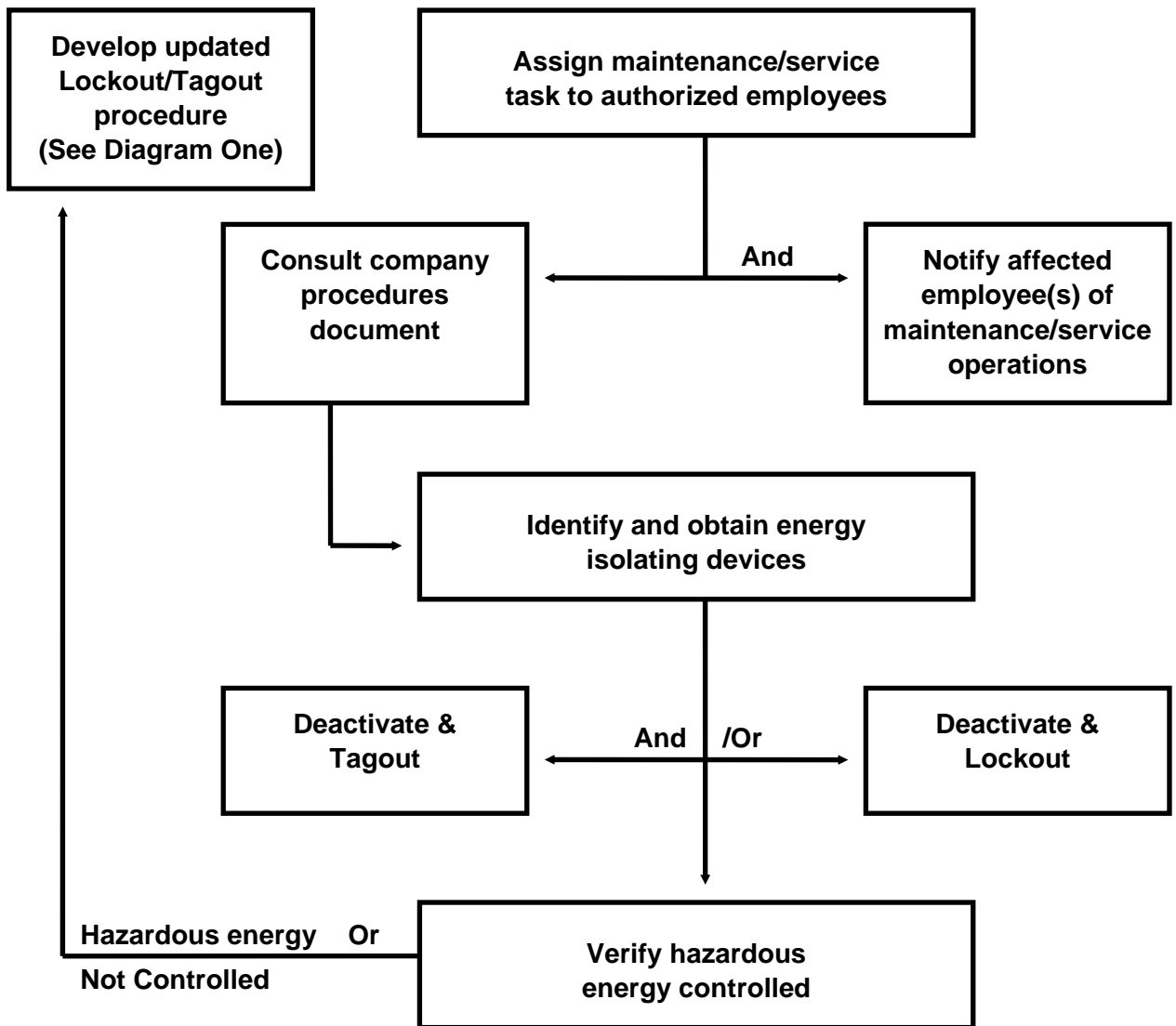
## Diagram One:

Flow diagram for developing a lockout/tagout program



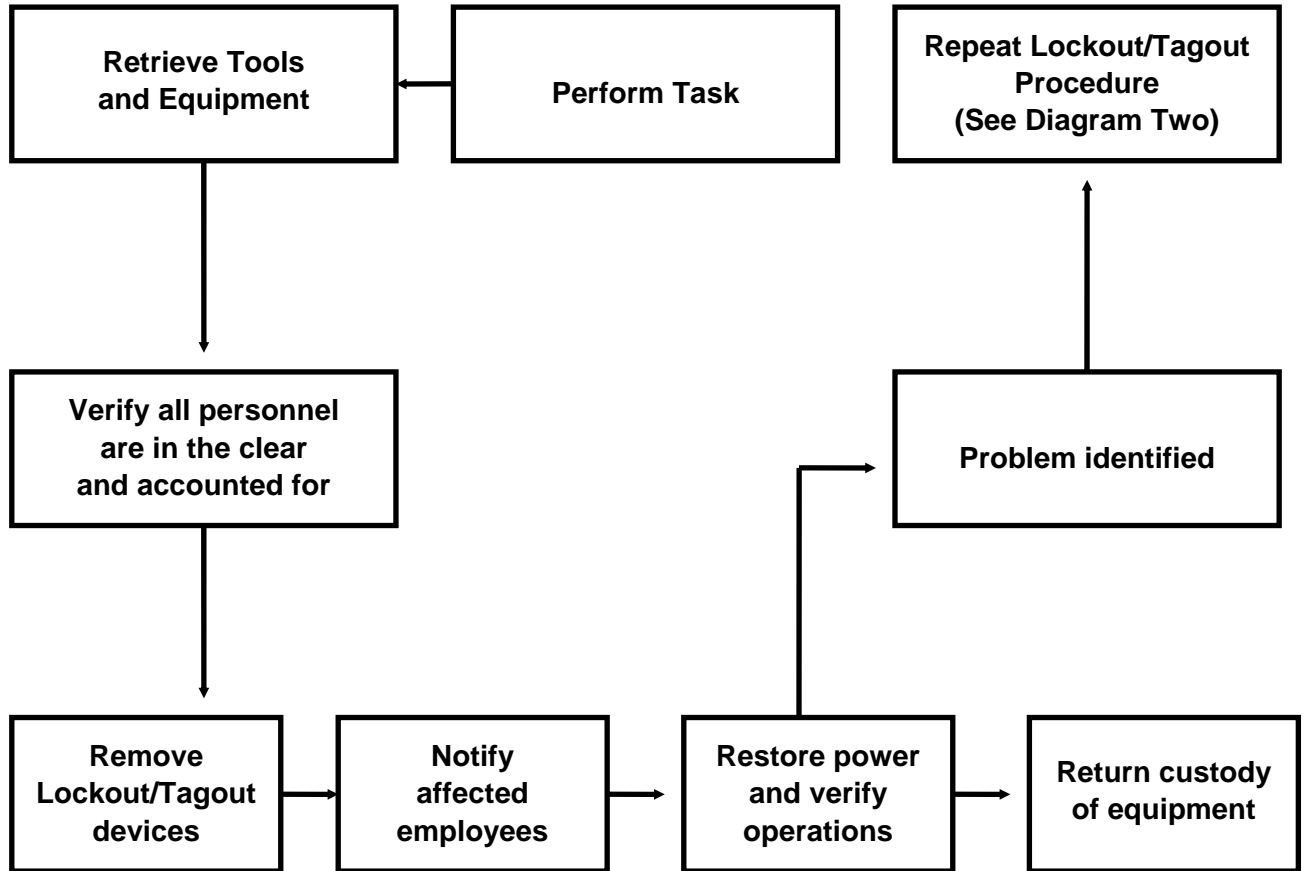
**Diagram Two:**

Flow diagram for initiating a task, using a lockout/tagout program

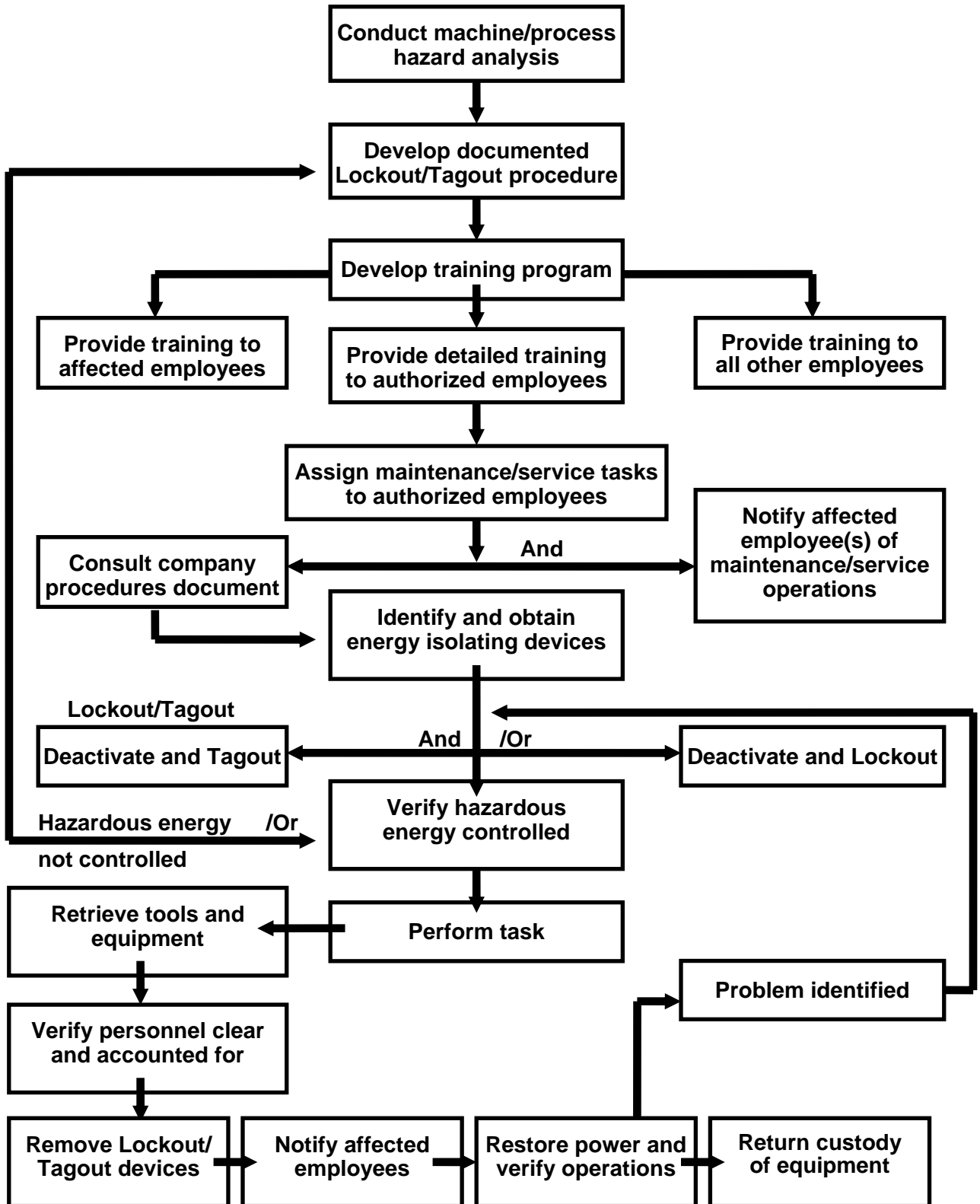


**Diagram Three:**

Flow diagram for completing a task and removing lockout/tagout devices using the lockout/tagout program



Example – Functional flow diagram for lockout/tagout requirements 1910.147



# TYPICAL MINIMAL LOCKOUT PROCEDURE

**Note:** The following Appendix to §1910.147 serves as a non-mandatory guideline to assist employers and employees in complying with the requirements of this section, as well as to provide other helpful information. Nothing in the Appendix adds to or detracts from any of the requirements of this section.

## APPENDIX A – TYPICAL MINIMAL LOCKOUT PROCEDURE

### GENERAL

The following simple lockout procedure is provided to assist employers in developing their procedures so they meet the requirements of this standard. When the energy isolating devices are not lockable, tagout may be used, provided the employer complies with the provisions of the standard which require additional training and more rigorous periodic inspections. When tagout is used and the energy isolating devices are lockable, the employer must provide full employee protection (see paragraph (c)(3)) and additional training and more rigorous periodic inspections are required. For more complex systems, more comprehensive procedures may need to be developed, documented and utilized.

### Lockout Procedure

Lockout procedure for

---

(Name of Company for single procedure or identification of equipment if multiple procedures are used.)

### PURPOSE

This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

**COMPLIANCE WITH THIS PROGRAM**

All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize or use that machine or equipment.

---

Type of compliance enforcement to be taken for violation of the above.

**SEQUENCE OF LOCKOUT**

- (1) Notify all affected employees that servicing or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.
- 

**Name(s)/Job Title(s) of affected employees and how to notify.**

- (2) The authorized employee shall refer to the company procedure to identify the type and magnitude of the energy that the machine or equipment utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.
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**Type(s) and magnitude(s) of energy, its hazards and the methods to control the energy.**

- (3) If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open switch, close valve, etc.).
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# TYPICAL MINIMAL LOCKOUT PROCEDURE

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## Type(s) and location(s) of machine or equipment operating controls.

- (4) Deactivate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).

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## Type(s) and location(s) of energy isolating devices.

- (5) Lock out the energy isolating device(s) with assigned individual lock(s).
- (6) Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.

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## Type(s) of stored energy--methods to dissipate or restrain.

- (7) Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate.

**Caution:** Return operating control(s) to neutral or "off" position after verifying the isolation of the equipment.

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## Method of verifying the isolation of the equipment.

- (8) The machine or equipment is now locked out.

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## TYPICAL MINIMAL LOCKOUT PROCEDURE

Oregon Administrative Rules  
Oregon Occupational Safety  
and Health Division

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**RESTORING EQUIPMENT TO SERVICE.** When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken:

- (1) Check the machine or equipment and the immediate area around the machine or equipment to ensure that non-essential items have been removed and that the machine or equipment components are operationally intact.
- (2) Check the work area to ensure that all employees have been safely positioned or removed from the area.
- (3) Verify that the controls are in neutral.
- (4) Remove the lockout devices and reenergize the machine or equipment.

**Note:** The removal of some forms of blocking may require reenergization of the machine before safe removal.

- (5) Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

(54 FR 36687, Sept. 1, 1989, as amended at 54 FR 42498, Oct. 17, 1989; 55 FR 38685, 38686, Sept. 20, 1990)

BILLING CODE 4510-26-C; 4510-26-M

**Stat. Auth.:** ORS 654.025(2) and ORS 656.726(3).

**Hist:** OR-OSHA Admin. Order 2-1990, f. 1/19/90, ef. 3/1/90.  
OR-OSHA Admin. Order 4-1991, f. 2/25/91, ef. 3/15/91.

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