

UNIVERSITY OF WISCONSIN-STEVENSON POINT
LOCKOUT/TAGOUT POLICY



Edited by:
Environmental Health and Safety
University of Wisconsin- Stevens Point
Old Main, Suite:133
Stevens Point, WI 54481

TABLE OF CONTENTS

1.0	PURPOSE
2.0	SCOPE
3.0	COMPLIANCE
4.0	DEFINITIONS
5.0	DEVELOPMENT AND LOCATION OF ENERGY CONTROL PROCEDURES
6.0	SEQUENCE OF LOCKOUT
7.0	PROCEDURE INVOLVING MORE THAN ONE PERSON
8.0	RESTORING EQUIPMENT TO SERVICE
9.0	ABANDONED LOCK REMOVAL
10.0	TRAINING
11.0	PERIODIC INSPECTION
12.0	CONTRACTORS
APPENDIX A	
	ENERGY CONTROL PROCEDURES

UW-STEVENS POINT LOCKOUT TAGOUT POLICY

1.0 PURPOSE

This policy establishes the minimum requirements for the lockout of energy control devices whenever maintenance or servicing is performed on machines or equipment. It shall be used to ensure that the machine or equipment is de-energized, 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.

2.0 SCOPE

This policy applies to the control of energy during servicing and/or normal maintenance of machines and equipment if:

1. An employee is required to remove or bypass a guard or other safety device; or
2. An employee is required to place any part of his or her body into an area on a machine or piece of equipment where work is being performed at or upon the point of operation, or where an associated danger zone exists during a machine operating cycle.

Exception: Minor tool changes and adjustments that take place during normal production operations are not covered by the OSHA Standard if they are routine, repetitive, and integral to the use of the equipment for production, provided that the work is performed using alternative measures that provide effective protection.

NOTE: The OSHA Lockout/Tagout Standard (See 29 CFR for 1910.147) does not apply to work on cord-and-plug-connected electrical equipment when the employee performing the service or maintenance controls energization by unplugging the equipment from the energy source. The standard also does not apply to hot tap operations involving transmission systems from substances such as gas, steam, water, or petroleum, when they are performed on pressurized pipelines. However, it must be demonstrated that the continuity of service is essential, cut off of the system is impractical, and special equipment is used which provides effective protection.

3.0 COMPLIANCE

All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. Employees authorized to lockout machines/equipment are required to perform the lockout in accordance with this policy. 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.

4.0 DEFINITIONS

1. Affected Employee:

An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

2. Authorized Person:

A knowledgeable individual to whom the authority and responsibility to perform lockout procedures has been given.

3. 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.

4. Energized:

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

5. Energy Control Isolating Device:

A physical-mechanical device that prevents the transmission or release of energy. Manually operated disconnect switches, line valves, blocks, and slide gates are examples of energy control devices that provide a visible indication of the position of the device. "On/Off" buttons, selector switches, and other control circuit devices are not energy control isolating devices.

6. Energy Source:

Any electrical, mechanical, hydraulic, pneumatic, chemical, nuclear, thermal, or other potential energy sources that could have the potential to endanger personnel.

7. Hot Tap:

A procedure used in the repair, maintenance, and services activities that 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.

8. 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.

9. 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.

10. Setting up:

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

11. 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.

12. 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.

5.0 DEVELOPMENT AND LOCATION OF ENERGY CONTROL PROCEDURES AND PROGRAM

A program consisting of energy control procedures, employee training, and periodic inspections shall be established to ensure that before any employee performs any servicing or maintenance on a machine or equipment where the unexpected energizing, startup or release of stored energy could occur and cause injury, the machine or equipment shall be isolated from the energy source and rendered inoperative.

- If an energy isolating device is not capable of being locked out, energy control program shall utilize a tagout system.
- If an energy isolating device is capable of being locked out and the utilization of a tagout system does not provide full employee protection, energy control program shall utilize lockout.

Locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware shall be provided for isolating, securing or blocking of machines or equipment from energy sources.

Lockout devices and tagout devices shall;

- Be singularly identified;
- Be the only devices(s) used for controlling energy;
- Not be used for other purposes; and
- Meet the following requirements:
 - Lockout and tagout devices shall be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.
 - Tagout devices shall be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.
 - Tags shall not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored.
 - Lockout and tagout devices shall be standardized within the facility in at least one of the following criteria: Color; shape; or size; and additionally, in the case of tagout devices, print and format shall be standardized.
 - Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.
 - Tagout devices, including their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. Tagout device attachment means shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a

minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-piece, all environment-tolerant nylon cable tie.

- Lockout and tagout devices shall indicate the identity of the employee applying the device(s).
- Tagout devices shall warn against hazardous conditions if the machine or equipment is energized and shall include a legend such as the following: *Do Not Start. Do Not Open. Do Not Close. Do Not Energize. Do Not Operate.*

Full employee protection: When a tagout device is used on an energy isolating device that is capable of being locked out, the tagout device shall be attached at the same location that the lockout device would have been attached. And the tagout program shall demonstrate that it will provide a level of safety equivalent to that obtained by using a lockout program.

Also, additional means can be considered as part of the demonstration of full employee protection that includes the implementation of additional safety measures such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent energization.

Staff responsible for performing equipment service shall develop the procedures to safely control of potentially hazardous energy. The Energy Control Procedures form at the end of this policy should be filled. Lockout directions for similar equipment that has the same energy control procedure can be generalized into a single form which should be placed in the general section of the binder. Procedures that require building or equipment-specific direction should be filed in the building-specific section. Binders should be kept in the department utilizing them, e.g. Facility Services, Power Plant, Housing and Information Technology. Employees with questions regarding appropriate lockout procedures should consult with their supervisor or Environmental Health and Safety.

The required procedure not need to be documented for a particular machine or equipment, when **all of the following elements exist:**

- The machine or equipment has no potential for stored or residual energy or reaccumulation of stored energy after shut down which could endanger employees;
- The machine or equipment has a single energy source that can be readily identified and isolated;
- The isolation and locking out of that energy source will completely de-energize and deactivate the machine or equipment;
- The machine or equipment is isolated from that energy source and locked out during servicing or maintenance;
- A single lockout device will achieve a locked-out condition;
- The lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance;
- The servicing or maintenance does not create hazards for other employees; and
- The employer, in utilizing this exception, has had no accidents involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.

6.0 SEQUENCE OF LOCKOUT

1. The authorized employee shall 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.
2. The authorized employee shall identify the type and magnitude of the energy that the machine or equipment utilizes, understand the hazards of each energy source, and know the methods to control the energy.
3. When the electrical disconnect is attached or adjacent to the equipment, the motor stop button shall be depressed and the disconnect handle placed in the "OFF" position. The disconnect handle should be operated while standing to one side of the disconnect rather than in front of the switch. The authorized employee should attach his/her lock to the handle of the disconnect and remove the key.
4. If a switch or disconnect cannot be locked out for any reason, a qualified person must remove the fuses before any work is started.
5. Stored or residual energy such as that in capacitors, springs, rotating flywheels, hydraulic systems, and air gas, steam, or water pressure lines must be dissipated or restrained by methods such as grounding, repositioning, blocking, vesting, etc.
6. Equipment using hydraulic pressure shall be locked out by placing the hydraulic pump motor electrical disconnect switch in the "OFF" position, applying a lock to the disconnect, and bleeding off residual pressure in the piping system if the energy could have the potential to endanger personnel.
7. The authorized employee shall verify that the equipment is completely disconnected from all energy source(s) by operating the push button or other normal operating controls or by otherwise testing to make certain the machine/equipment will not operate.
8. Return operating control(s) to neutral or "OFF" position after verifying the isolation of the equipment.
9. The machine is now locked out and service or repairs can safely begin.
10. If there are any doubts about the above procedure, the authorized employee shall contact his/her supervisor before proceeding.

7.0 PROCEDURE INVOLVING MORE THAN ONE PERSON

In the preceding steps, if more than one individual is required to lockout equipment, each authorized person shall place his/her own personal lockout device on the energy isolating device(s). When an energy isolating device cannot accept multiple locks, a multiple lockout or tagout device (hasp) may be used. Each personal lockout device shall have a unique key and indicate the identity of the employee applying the device(s). The department supervisor should have the only duplicate keys.

8.0 RESTORING EQUIPMENT TO SERVICE

When servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken by the authorized person:

1. Visually inspect the machine or equipment and the immediate area around the machine or equipment to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
2. Visually inspect the work area to ensure that all employees have been safely positioned or removed from the area.
3. Verify that the controls are neutral.
4. Remove the lockout device(s) and reenergize the machine or equipment.

NOTE: The removal of some forms of blocking may require reenergizing the machine before safe removal.

5. Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready to use.

9.0 ABANDONED LOCK REMOVAL

If a safety lock has been left in place by an employee who has departed the building, it shall be removed only by adherence to the following procedure:

Before the lock is removed:

1. A thorough inspection of the equipment is to be made by the supervisor responsible for the area.
2. The supervisor must confirm that the authorized employee who applied the lockout device is not at the facility.
3. The supervisor shall remove the lock providing he/she has determined starting up the equipment will not endanger other personnel.
4. Each time it is necessary to remove/cut a safety lock, a written report shall be prepared by the person authorized to remove the lock, and a copy to be sent to the EHS.
5. The supervisor shall make a reasonable effort to contact the employee who originally applied the lock to inform him/her that the device has been removed. This contact is necessary so that the affected employee would be informed that this has occurred prior to resuming work at this facility.

10.0 TRAINING

1. Each authorized employee will receive training in the recognition of applicable hazardous 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. Each affected employee will be instructed in the purpose and use of the energy control procedure.
3. All other employees whose work operations are or may be in an area where energy control procedures may be utilized, will be instructed about the procedure and about the prohibition relating to attempts to restart to reenergize machines or equipment which are locked out or tagged out.

4. When employees are assigned to work in or on equipment that could have potential to endanger personnel should it be activated, the supervisor assigning employees to this work is responsible for ensuring that these workers are provided with specific equipment and training that has instructions to comply with this power lockout procedure.

5. Lockout/tagout procedures for specific operations should be recorded on the Energy Control Procedures form in Appendix A by the department responsible for the operation.

6. When tagout systems are used, employees shall also be trained in the following limitations of tags:

- Tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint on those devices that is provided by a lock.
- When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.
- Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area, in order to be effective.
- Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.
- Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.
- Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

7. Authorized and affected employees will be retrained whenever there is a change in their job assignments that could affect their lockout responsibilities, a change in the machines that present a hazard or when there is a change in energy control procedures.

8. Additional retraining will be conducted whenever the periodic inspection reveals that there are deviations from or inadequacies in the employees' knowledge or use of energy control procedures.

9. The retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.

10. The employee training that has been accomplished shall be certified and is being kept up to date. The certification shall contain each employee's name and dates of training.

11.0 PERIODIC INSPECTION

Comprehensive inspection/audit of the energy control procedure will be conducted at least annually by an authorized employee to correct any deviations or inadequacies identified and ensure that the campus is in compliance with the OSHA 1910.147 standard and the procedures outlined in this policy.

Where lockout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.

Where tagout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized and affected employee, of that employee's responsibilities under the energy control procedure being inspected, and the elements of training mentioned in section 10.0.

The periodic inspections that have been performed shall be certified. The certification shall identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection and shall be kept for 30 years.

12.0 CONTRACTORS

The requirements and procedures described in this policy must be explained, by the campus representative responsible for arranging the work, to contractors who come to the campus to perform installations, service, and/or maintenance work. Contractors must also inform the campus representative of their own lockout/tagout procedures.

APPENDIX A

ENERGY CONTROL PROCEDURES

Procedure for: _____
Equipment Building Location

DATE: ___/___/___ COMPLETED BY: _____

MACHINES OR EQUIPMENT UTILIZING THIS PROCEDURE:

PROCEDURE FOR CONTROLLING HAZARDOUS ENERGY

1. Be familiar with the sources of hazardous energy for the machine or equipment that will be serviced.

CHECK SOURCES OF HAZARDOUS ENERGY PRESENT

___ Electrical ___ Engine ___ Spring
___ CounterWeight ___ Flywheel ___ Hydraulic
___ Pneumatic ___ Chemical ___ Thermal
___ Other _____

2. Identify what systems and which staff will be affected by this procedure.

Specific systems and staff affected: _____

3. Notify affected staff that the machine is about to be shutdown and locked out.

Specific Instructions: _____

4. Shut down the machine using normal stopping procedures.

Specific Instructions: _____

5. Isolate all energy sources listed above.

Specific Instructions: _____

6.a Apply locks to all isolation devices operated in step four.

Specific Instructions: _____

b. If a tag is used in lieu of a lock when the energy isolating device is incapable of lockout, the following additional safety precautions shall be taken:_____

7. Block or dissipate all stored energy in rams, flywheels, springs, pneumatic or hydraulic systems, etc.

Specific Instructions: _____

8. Verify that the machine is locked out by testing the machine operating controls. RETURN ALL CONTROLS TO THE “NEUTRAL” OR “OFF” POSITION AFTER TESTING.

Specific Instructions: _____

PROCEDURE FOR REMOVING LOCKS/TAGS

- 1. Check the machine to be sure it is operationally intact, tools have been removed, and guards have been replaced.**

Specific Instructions: _____

- 2. Check to be sure all employees are safely positioned.**

Specific Instructions: _____

- 3. Notify all affected employees that locks/tags are going to be removed and the machine is ready for operation.**

Specific Instructions: _____

- 4. Remove all locks, blocks, or other energy restraints.**

Specific Instructions: _____

- 5. Restore all energy to the machine.**

Specific Instructions: _____

OTHER COMMENTS: _____

LOCKOUT/TAGOUT PROCEDURES CHECKLIST

	Is all machinery or equipment capable of movement, required to be de-energized or disengaged and locked-out during cleaning, servicing, adjusting or setting up operations, whenever required?
	Where the power disconnecting means for equipment does not also disconnect the electrical control circuit:
	Are the appropriate electrical enclosures identified?
	Is means provided to assure the control circuit can also be disconnected and locked-out?
	Is the locking-out of control circuits in lieu of locking-out main power disconnects prohibited?
	Are all equipment control valve handles provided with a means for locking-out?
	Does the lock-out procedure require that stored energy (mechanical, hydraulic, air, etc.) be released or blocked before equipment is locked-out for repairs?
	Are appropriate employees provided with individually keyed personal safety locks?
	Are employees required to keep personal control of their key(s) while they have safety locks in use?
	Is it required that only the employee exposed to the hazard, place or remove the safety lock?
	Is it required that employees check the safety of the lock-out by attempting a startup after making sure no one is exposed?
	Are employees instructed to always push the control circuit stop button immediately after checking the safety of the lock-out?
	Is there a means provided to identify any or all employees who are working on locked-out equipment by their locks or accompanying tags?
	Are a sufficient number of accident preventive signs or tags and safety padlocks provided for any reasonably foreseeable repair emergency?
	When machine operations, configuration or size requires the operator to leave his or her control station to install tools or perform other operations, and that part of the machine could move if accidentally activated, is such element required to be separately locked or blocked out?
	In the event that equipment or lines cannot be shut down, locked-out and tagged, is a safe job procedure established and rigidly followed?