

**San Juan College**  
**Environmental Health**  
**Farmington, New Mexico**

**The Control of Hazardous Energy**  
*Lockout/Tagout*

**Objectives:**

- OSHA lockout/tagout program standards
- Explanation of the lockout/tagout program in the workplace
- Lockout/tagout procedures for employees training list

**OSHA 29 CFR 1910.147 CONTROL OF HAZARDOUS ENERGY**

OSHA 29 CFR 1910.147 lockout/tagout regulations are designed to cover the employees who service and maintain machines and equipment in the workplace. Regulations are designed for the prevention of an unexpected start-up of machinery and equipment while the employee is working on them.

Standards cover all energy forms; electrical, vacuum, air, fuel, atomic, steam and water.

OSHA has concluded that this standard is necessary because too many workers were being injured and killed because of unexpected sudden equipment start-up energy while an employee was working on machinery or equipment.

**Energy Control Program**

The program developed for lockout/tagout is the energy control program.

**General:**

San Juan College is responsible for providing and establishing a program for; energy control procedures, employee training, and periodic inspections to assure that before any servicing or maintenance on a machine or equipment by an employee where the unexpected energizing, start-up, or release of stored energy could occur causing possible injury, machinery or equipment would be isolated from energy sources and rendered inoperative.

### **Lock/Tagout:**

San Juan College shall utilize a tagout system in accordance to this section if an energy-isolating device is not being locked out. San Juan College's energy control program shall utilize lockout if an energy-isolating device is not capable of being locked out, unless the employer can demonstrate that tagout will provide full employee protection.

*OSHA standards dictate that since January 20, 1990, whenever new machines or equipment are installed, isolating devices must be capable of being locked out.*

### **Full Employee Protection:**

The procedure when a tagout device is used on an energy isolating device that can be locked out is: the tagout device shall be attached at the same location where the lock-out device would have been attached and will provide the same consistent level of protection equal to that of the lockout device.

If San Juan College uses the tagout device, the employee must demonstrate the equivalency of the level of safety as the lockout together with additional elements of the tagout program, such as: the removal of an isolating circuit element, blocking of control switches, the opening of an extra disconnect, and or the removal of valve handles.

### **Procedures for Energy Control:**

Developed, documented, and utilized procedures are to be utilized for the control of potentially hazardous energy when employees engage in activities covered in this section.

To enforce compliance, the following procedures shall outline the scope, purpose, authorization, rules and techniques for the control of hazardous energy. Specific steps and procedures must be included for shutting down, isolating, blocking, and securing machines and equipment; the responsibility and procedures for the placement, removal, transfer of lockout devices or tag-out devices, the responsibility for them, and testing requirements for machinery and equipment, and the verification of effectiveness of lockout or tag-out devices.

### **Protective Materials and Hardware:**

San Juan College will provide; locks, chains, wedges, key blocks, adapter pins, self-locking fasteners, and or other hardware for securing machines and equipment.

Lockout and tagout devices will be identified and not available or for use for any other purpose.

All devices will be durable and capable of withstanding the environmental requirements that they are exposed to.

All printing on tag-out devices must be and remain legible and withstand environmental conditions they are exposed to.

Tags must be capable of surviving deterioration in corrosive environments.

### **Standardization:**

Within the campuses, lockout and tagout devices shall be standardized.

Substantial devices will be used to prevent removal without the use of excessive force.

Tagout devices to prevent inadvertent or accidental removal shall be substantial.

### **Identifiable:**

All lockout and tagout devices shall identify the employee applying the device(s).

Warnings on tag-out devices will warn against hazardous conditions if machinery or equipment is energized and shall be marked: **DO NOT START, DO NOT OPEN, DO NOT CLOSE, DO NOT ENERGIZE, or DO NOT OPERATE.**

### **Periodic Inspection:**

San Juan College shall conduct a periodic inspection of the energy control procedure at least annually.

An authorized employee other than the one utilizing the inspected energy control procedure being inspected will perform periodic inspections.

Identified inadequacies or deviations will be corrected by prompt inspections.

Under the energy control program where lockout is used, the inspection shall include a review of that employee's responsibility.

When using tag-out the inspection will include a review of that employee's responsibilities under the tagout control program.

San Juan College will be responsible for certifying that periodic inspections have been performed. All certification shall render and identify the machine or equipment, the date of inspection, the names of employees involved with the inspection, and the person responsible for performing the inspection.

### **Training and Communication:**

San Juan College shall provide training to ensure employee knowledge and skills concerning energy control devices.

#### **All training will include:**

- Recognition of hazardous energy sources
- Types and magnitude of energy available in the workplace, and the methods necessary for energy isolation and control

- Purpose and use of energy control procedures
- Instruction of employees who work in areas where energy control devices are used
- Information to warn of attempting to re-energize machinery and equipment that are locked or tagged out.

***Employees will be trained as follows when tag-out systems are used:***

- Tags are warning devices and do not provide safe restraint as do locks.
- When tags are removed from an energy isolation device, devices cannot be removed without the proper authorization of the person responsible for it, it is never to be bypassed, ignored, or defeated.
- All tags must be written legibly and be understandable.

***Retraining shall be provided as follows:***

- When employees change in job assignments, machines, equipment, or processes that present a new hazard.
- Whenever San Juan College feels that, the employee has inadequacies concerning procedures.
- When new or revised control methods are introduced.

San Juan College is responsible to certify that training has been completed and that it is being kept up to date. Certification shall contain the employee's name and dates of training.

**Energy Isolation.**

Only authorized employees who are servicing or maintaining the equipment for lockout and tag-outs are to perform these services.

**Employee Notification:**

San Juan College shall notify affected employees or authorized employee concerning the application and removal of lockout or tag-out devices. Before controls are put on and after they are removed notification shall be given.

Lockout or tag-out procedures must include the sequence as follows:

1. The employee must have knowledge about the machine or equipment they are turning off.
2. The machine or equipment can only be shut down using established procedures.
3. All energy isolating devices controlling energy to the machine or equipment must be shut down.
4. Devices for lockout or tag-out must be affixed.
5. Lockout devices will be in the “safe” or “off” position for energizing isolation devices.
6. Devices used for tag-out shall be affixed to indicate that the operation or movement of energy isolating devices from the “safe: or “off” position is not allowed.
7. Tag-out devices will be affixed at any location, which a lock would have been installed.
8. When a tag cannot be affixed directly to the energy-isolating device, it will be located in an obvious place immediately where anyone attempting to operate the device will see the tag.

### **Verification of Isolation.**

Before starting to work on machinery or equipment that has been secured, only authorized employees shall verify that they have been de-energized.

When machines or equipment have been locked out or tagged-out the following procedures must be taken:

1. The work are must be inspected to assure that nonessential items have been removed.
2. Employees are required to be removed form the area.
3. Affected employees will be notified of the lockout or tagout device(s) and that they have been removed.

Only the employee who applied the device shall remove lockout or tagout devices. When an authorized employee is unavailable for the removal of a device, it may be removed under the direction of San Juan College providing that the procedure have been incorporated into the energy control program. Incorporated procedures must include the following: verification and documentation that the authorized employee is not at the facility; making sure that all reasonable efforts to contact the authorized employee that their lockout or tag-out device has been

removed; ensure that the authorized employee is informed and has knowledge before they come back to work.

### **Additional Requirements:**

The following sequences will be followed in situations where lockout or tag-out devices must be temporarily removed to test or reposition machinery or equipment.

1. All machines or equipment of tools will be cleared.
2. All employees are to be removed from the area.
3. Lock out or tag-out devices are to be removed in accordance or proper procedures.
4. Energize and proceed with the testing or positioning.
5. De-energize all systems with control measures in accordance with proper procedures before reapplying energy control.

All outside contractors are to be engaged only in activities covered by the lockout/tagout standard; on-site employer (San Juan College) and the outside employer shall communicate and inform each other of their respective lockout/tag-out procedures.

All servicing or maintenance performed by a crew requires each employee to affix a personal lockout or tag-out device to the group lockout device, group lockbox, and or comparable mechanism when they begin work and the devices shall be removed only when they stop working on the machine or equipment being serviced or maintained.

Specific procedures addressed shall be utilized during shift or personnel changes to assure the consistent continuity of protection, including the transfer o lockout or tag-out devices that protect the off-going and on-coming transition of employees.

### **Definitions:**

*Authorized employee* is a person who locks out or tags out machines or equipment in order to perform servicing or maintenance.

*Capable of being locked out* refers to an energy-isolating device capable of being locked out if it has a hasp or other means of attachment, or through which a lock can be affixed, or to have a locking mechanism built into it.

*Energy isolating device* is a mechanical device that prevents the transmission or release of energy. It includes circuit breakers, disconnect switches, manually operated switches, line valves, blocks, and push –button selector switches.

*Lockout* is the placement of a lockout device on an energy-isolating device so that the energy-isolating device and the equipment to be controlled cannot be operated unless the lockout device is removed.

*A lockout device is a key or combination type that holds an energy-isolating device in a safe position.*

*Tag-out* is the placement of a tag-out device on an energy-isolating device to indicate that the energy-isolating device cannot be operated until the tagout device is removed.

*Tag-out device* is a prominent warning device that can be securely fastened to an energy-isolating device, and the equipment may not be operated until the tagout device is removed.

## **OSHA Directives**

### **1910.147(c)(7)(iii)(A)**

**Employee retraining:** Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures.

### **1910.147(c)(7)(iii)(B)**

**Additional retraining:** Additional retraining shall also be conducted whenever a periodic inspection under paragraph (c) (6) of this section reveals, or whenever the employer has reason to believe that there are deviations from or inadequacies in the employee’s knowledge or use of the energy control procedures.

**1910.147(c) (7) (iii) (C)**

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

**1910.147(c) (7) (iv)**

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

**1910.147(c) (6) (i)**

The employer shall conduct a periodic inspection of the energy control procedure at least annually to ensure that the procedure and the requirements of this standard are being followed.

