

Lockout-Tagout Program



Control of Hazardous Energy

Purpose	<p>The purpose of this program is to provide clear procedures to employees or contractors who maintain and/or service equipment where unexpected startup or release of stored energy may occur and has the capacity to cause injury.</p> <p>This program is implemented with compliance to:</p> <ul style="list-style-type: none"> • OSHA standard 29 CFR 1910.147 for the Control of Hazardous Energy (Lockout-Tagout).
Scope	<p>This program applies to all employees or contractors whose job requires he/she to use or operate equipment, or occupy an area where tools or equipment are to be serviced or maintained under the lockout-tagout procedures.</p> <p>Note: Minor adjustments, tool changes and maintenance that are essential to normal everyday use <u>are not covered</u> under the lockout-tagout procedure as long as alternative measures to provide effective protection are used.</p>
Records Created	<p>Lockout-Tagout Procedures Periodic Inspection Form Annual Audit of Lockout-Tagout Program Training Records</p>
References	<p>NFPA 70E Machine Guarding Program</p>
Terminology	<p><i>Affected Employee:</i> An employee whose job requires he/she to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires he/she to work in an area in which such servicing or maintenance is being performed.</p> <p><i>Authorized Employee:</i> A person who applies lockout-tagout principles in order to safely de-energize equipment in order to perform service or maintenance.</p> <p><i>Capable of Being Locked Out:</i> An energy isolating device is capable of being locked out if it has a hasp or other means of which to attach an acceptable lock mechanism or if there is a built in locking mechanism present.</p> <p><i>Energy Isolating Device:</i> A mechanical device that <u>physically</u> prevents the transmission or release of energy.</p> <p><i>Energy Source:</i> Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other type of energy.</p> <p><i>Lockout-Tagout:</i> The placement of a lockout AND tagout 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.</p> <p><i>Lockout Device:</i> A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment.</p>

NFPA 70E: National Fire Protection Association, the 70E standard establishes workplace practices to avoid injuries and fatalities due to shock, electrocution, arc flash, and arc blast.

Normal Operation: Machine or equipment being used and operated under normal, accepted conditions.

OSHA: Occupational Safety and Health Administration

Residual Electrical Power: Electrical energy that may be present in a machine or piece of equipment after the power supply is disconnected and control switches are placed in the “off” position.

Residual Pressure: Pressure remaining (hydraulic, pneumatic, etc.) within the system after the source is closed off and the control switches are placed in the “off” position.

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 unjamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

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 lockout AND tagout devices are removed.

Zero Mechanical State: State in which all energy sources have been removed or isolated, all residual energy has been dissipated or blocked and rotating or stored energy has been stopped and blocked.

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1.0 INTRODUCTION

Employees or contractors servicing or maintaining machines or equipment can be seriously injured or killed if hazardous energy is not properly controlled. OSHA's Lockout-Tagout standard provides practices, procedures, and training requirements to safeguard such workers from the release of hazardous energy.

2.0 RESPONSIBILITIES

2.1 Buildings and Grounds Supervisor

- Comply with OSHA's Lockout-Tagout standard.
- Ensure a safe work environment.
- Communicate lockout-tagout procedures to applicable Contractors.
- Develop specific lockout-tagout procedures (as required).
- Provide adequate lockout-tagout devices such as fabricated devices, locks, tags, and other materials.
- Designate authorized employees.
- Ensure authorized employees are periodically inspected.
- Ensure lockout-tagout procedures are annually reviewed for accuracy.
- Provide training to authorized and affected employees.
- Maintain all records such as procedures and trainings.
- Annual audit of the lockout-tagout written program.

2.2 Department Supervisors

- Ensure safety of their assigned employees.
- Conduct on-the-job training for non-routine tasks.
- Ensure implementation of District's lockout-tagout program including following procedures and applying isolating devices.
- Ensure employees are trained as outlined in this program.
- Report deficiencies of this program including when new hazards are identified or introduced into the workplace to the Buildings and Grounds Supervisor.

2.3 Authorized Employees

- Comply with the lockout-tagout principles described in this written plan.
- Ensure a safe work environment including working solely in an electrically safe work condition.
- Utilize lockout-tagout devices.
- Participate in the periodic inspection.
- Report any incorrect lockout-tagout procedure to Buildings and Grounds Management.
- Attend scheduled safety training sessions.
- Report any unsafe act or condition to the Department Supervisor or Buildings and Grounds Management.

ISD #831 authorized employees include:

- Buildings and Grounds Day and Night Leads
- Maintenance and Grounds Leads
- Transportation Mechanics

2.4 Contractors

Contractors are responsible to:

- Comply with ISD #831 lockout-tagout principles – OR – by following their own Company protocols that must be at least as stringent as described in this written plan.
- Ensure a safe work environment.
- Report any unsafe act or condition to their immediate Supervisor.

3.0 ELECTRICALLY SAFE WORK CONDITION

Creating an electrically safe work condition shall be the primary objective for all electrical work. By definition (NFPA 70E), an electrically safe work condition is a state in which electrical work to be conducted has been safely disconnected or de-energized (zero mechanical state). This premise is otherwise known as lockout-tagout.

It's not always possible to de-energize equipment or produce an electrically safe work condition. Such instances include:

- If de-energizing equipment would create a greater hazard.
- If de-energizing is not possible due to equipment design (i.e. equipment linked to larger continuously operating system).
- Nature of work requires equipment to be energized (i.e. voltage testing or infrared thermography).

Work activities that cannot be accomplished in an electrically safe work condition shall be conducted by a Licensed Registered Electrician. ISD #831 does not have any Licensed Registered Electricians on staff.

4.0 UNLICENSED REGISTERED ELECTRICIAN

ISD #831 has partnered with a licensed electrical company to credential key members of the Buildings and Grounds team as Unlicensed Registered Electricians. This registration with the Department of Labor & Industry allows for such employees to perform "repair or replacement of existing equipment" so long as they do it under the electrical contractor's license. All work performed by such individuals must be conducted in an electrically safe work condition using lockout-tagout procedures and principles. Employees holding this qualification must complete two (2) hours of continuing education on the electric code for annual renewal.

Buildings and Grounds Management is responsible for maintaining records and trainings related to Unlicensed Registered Electricians.

5.0 SPECIFICATIONS FOR LOCKOUT-TAGOUT DEVICES

Lockout-tagout devices shall be singularly identified; shall be the only device(s) used for controlling energy; shall not be used for other purposes and be:

- Durable with minimum unlocking strength of no less than 50 pounds and able to withstand environmental conditions
- Standardized in at least one of the following criteria: color, shape or size
- Identifiable

Tags shall warn against hazardous conditions if the machine or equipment is energized

and shall include a legend such as:

- Do Not Start
- Do Not Open
- Do Not Close
- Do Not Energize
- Do Not Operate

6.0 GENERAL LOCKOUT-TAGOUT PROCEDURES

Authorized employees or contractors who maintain and service machines and equipment should utilize general lockout-tagout principles provided in Section 9.1 Steps to De-Energize and Section 9.2 Steps to Re-Energize to ensure control of any energy source regardless of multitude or magnitude. This especially holds true for single-source energy that is not under exclusive control of the authorized employee or contractor.

7.0 INVENTORY OF EQUIPMENT

All machinery and equipment with two or more sources of energy shall be inventoried for specific lockout-procedures.

Buildings and Grounds Management maintains the inventory of ISD #831 applicable machinery and equipment.

8.0 EXEMPT EQUIPMENT

An inventory and specific procedures are not required for machinery or equipment that meets all of the following requirements:

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

9.0 SPECIFIC LOCKOUT-TAGOUT PROCEDURES

The role of specific lockout-tagout procedures is to ensure that all potentially hazardous energy has been isolated, dissipated and locked out before any authorized employee or contractor performs maintenance or service. Only authorized employees or contractors are allowed to perform service or maintenance using specific lockout-tagout procedures.

ISD #831 requires their authorized employees to utilize both lockout and tagout devices. Tagout is to be performed instead of lockout **only** when there is no way to lockout the machine or equipment and by approval of Buildings and Grounds Management.

Buildings and Grounds Management maintains ISD #831 specific lockout-tagout

procedures for machinery and equipment. Authorized employees are provided the specific lockout-tagout procedures during service and/or maintenance activities via a computer based work order system.

9.1 Steps to De-Energize

The specific lockout-tagout procedures shall include the following actions in these six (6) sequential steps:

1. Preparation for Shutdown
2. Turn Off or Shutdown
3. Energy Isolation
4. Lockout-Tagout Device Application
5. Release Stored or Residual Energy
6. Verification of Energy Isolation

9.2 Steps to Re-Energize

Before lockout-tagout devices are removed and energy is restored, the authorized employee or contractor shall:

- Inspect the work area to ensure that nonessential items have been removed and machine or equipment components are operationally intact.
- Ensure all authorized and affected employees are safely positioned and notified that the lockout-tagout device(s) have been removed.
- Only remove those lockout-tagout device(s) applied by him/her. When that is not possible, Buildings and Grounds Management shall verify that the authorized employee or contractor who applied the device(s) is not at the facility, make reasonable effort to contact the authorized employee or contractor to inform him/her that the device(s) were removed, and ensure that the authorized employee or contractor has been notified of device(s) being removed prior to any work at the location.

10.0 TEMPORARY REMOVAL OF ENERGY ISOLATING DEVICES

Some situations, such as testing, require the temporary removal of lockout-tagout devices so that equipment or machinery be energized to evaluate its' operation.

For these instances, an authorized employee or contractor shall:

- Follow Section 9.2 Steps to Re-Energize
- Energize equipment or machinery and proceed with temporary status
- Once complete and service or maintenance is still needed, follow Section 9.1 Steps to De-Energize.

11.0 GROUP LOCKOUT-TAGOUT AND SHIFT CHANGES

When service and/or maintenance is performed by two (2) or more people, the group shall utilize all principles described in this plan which affords a level of protection equivalent to implementing individual, personalized lockout-tagout device(s).

During group lockout-tagout activities, a primary authorized employee or contractor shall be responsible for ensuring coordinated efforts and continuity of protection for all workers involved in the service and/or maintenance activities. The primary authorized employee or contractor shall assure that each worker affixes a personal lockout or tagout device(s) to the group lockout device(s) OR comparable mechanism and shall permit only those workers to remove such device(s). The primary authorized employee or contractor shall

ensure that the continuity of lockout-tagout protection continues even during shift changes.

12.0 ANNUAL REVIEW OF SPECIFIC LOCKOUT-TAGOUT PROCEDURES

Buildings and Grounds Management is responsible to ensure that all specific lockout-tagout procedures are annually reviewed for accuracy. During that review period, new or altered equipment and machinery requiring a lockout-tagout procedure shall be identified and procedures developed.

13.0 PERIODIC INSPECTION

A periodic inspection (performed at least annually) shall be conducted to correct any deviation or inadequacy with the specific lockout-tagout procedure and the authorized employee(s). A review between the inspector and authorized employee(s) shall be documented and include the date of the inspection, the machine or equipment involved with the hands-on review, the employee(s) included in the inspection and the name of the inspector.

A boilerplate template for the Periodic Inspection is provided in Appendix A.

Buildings and Grounds Management is responsible for ensuring the Periodic Inspections are completed and shall retain such forms for at least one year.

14.0 TRAINING

Training will be provided to all authorized and affected employees as part of the implementation of the lockout-tagout program. Employees will be trained in recognition of hazardous energy sources as well as methods of isolation and control.

Retraining will occur when:

- New machinery or equipment is added, changes are made that present a new hazard, or there is a change in specific lockout-tagout procedures or this written program.

Additional retraining will occur when periodic inspections reveal inadequacies or deficiencies in the lockout-tagout program or the employee(s) knowledge and skillset of specific lockout-tagout procedures.

Buildings and Grounds Management is responsible for maintaining training records.

15.0 ANNUAL AUDIT OF PROGRAM

Buildings and Grounds Management shall ensure that this written Lockout-Tagout Program is annually reviewed to ensure it's up to date with changing legislation, best practices, accurately being implemented at site(s), etc.

A boilerplate template for the Annual Audit is provided in Appendix B.

Buildings and Grounds Management is responsible to conduct the annual review.

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Periodic Inspection Form

*Directions: Conduct periodic inspections for authorized employees **at least annually**. Use the lockout-tagout procedure for the selected equipment during the inspection to review responsibilities and ensure proper shutdown.*

Building:	Date:		
Location:	Equipment:		
Authorized Employee(s) & Job Title(s) <i>(being evaluated during the inspection)</i> :			
EVALUATION			
	Yes	No	N/A
Do authorized employees understand how to read the lockout-tagout procedure specific for the equipment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were affected persons notified of lockout?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have authorized employee(s) shutdown the equipment thru normal operations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have authorized employee(s) recognized all energy sources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have authorized employee(s) recognized all energy isolating devices?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can all energy isolating devices be safely locked and tagged out of service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are lockout devices and tagout placards durable and appropriate for the procedure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was residual and/or stored energy safely released?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have authorized employee(s) verified that de-energization of the equipment was successful?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prior to restoring the equipment to normal function, have guards been restored, tools/materials removed, and affected employees notified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After safely removing lockout-tagout devices and restoring energy to the equipment, has the equipment returned back to normal operating condition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CORRECTIVE ACTIONS			
For those items indicated as NO, please provide the corrective action taken or needed:			
COMMENTS			
Please provide any additional comments based on this inspection:			
INSPECTOR CERTIFICATION			
I verify that the authorized employee(s) successfully demonstrated knowledge and responsibility in the lockout-tagout program.			
Name of Inspector:	Job Title:		

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Annual Audit of Lockout-Tagout Program

Conducted by:	Date:
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WRITTEN PROGRAM

Task	Yes	No
Is there a written lockout-tagout program?	<input type="checkbox"/>	<input type="checkbox"/>
Are general lockout-tagout principles provided?	<input type="checkbox"/>	<input type="checkbox"/>
Have specific lockout-tagout procedures developed, contain all required information, and are up to date?	<input type="checkbox"/>	<input type="checkbox"/>
Does the program describe how the periodic inspections will occur?	<input type="checkbox"/>	<input type="checkbox"/>
Does the program define appropriate training requirements?	<input type="checkbox"/>	<input type="checkbox"/>
Are there procedures for temporary removal of lockout-tagout devices?	<input type="checkbox"/>	<input type="checkbox"/>
Are there procedures for coordinating with outside contractors, protocols to define group and shift changes during lockout-tagout?	<input type="checkbox"/>	<input type="checkbox"/>
Are there procedures for the removal of locks other than that of the person who placed the lock?	<input type="checkbox"/>	<input type="checkbox"/>

DEVICES

Does the lockout-tagout devices used in the facilities meet the requirements such as durable, standardized, identifiable, and approved?	<input type="checkbox"/>	<input type="checkbox"/>
Are the lockout-tagout devices only being used for lockout-tagout and NOT for any other intended purpose?	<input type="checkbox"/>	<input type="checkbox"/>

SPECIFIC LOCKOUT-TAGOUT PROCEDURES

Are specific lockout-tagout procedures being reviewed annually?	<input type="checkbox"/>	<input type="checkbox"/>
Is new or altered machinery and equipment that requires a specific lockout-tagout instruction being captured and procedures developed?	<input type="checkbox"/>	<input type="checkbox"/>

PERIODIC INSPECTIONS

Are periodic inspections of authorized employees and lockout-tagout procedures being conducted and documented as requires?	<input type="checkbox"/>	<input type="checkbox"/>
If the inspection reveals any deviations or inadequacies, are appropriate corrective actions taking place?	<input type="checkbox"/>	<input type="checkbox"/>

TRAINING

Is there evidence that training has been conducted for all authorized and affected employees, and that any retraining necessary has been accomplished?	<input type="checkbox"/>	<input type="checkbox"/>
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Note: For those items marked as NO, please provide corrective action:
