

ORIGINAL MSAD #75 Safety and Health Program	LOCATION MSAD 75 School District	PROCEDURE NUMBER MSAD-75-006
	TITLE SAFETY	DATE 4/10 Rev 2
	Lockout - Tagout	1910.147

Lockout – Tagout

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GBE Safety Policy
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29CFR 1910.147 – The Control of Hazardous Energy (Lockout/Tagout)

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I. OBJECTIVE

The objective of this procedure is to establish the guidelines for ensuring safe work practices when servicing or performing maintenance on equipment that possesses, or has the potential of, hazardous energy. This procedure has been developed in accordance with the federal Code of regulations; 29 CFR 1910.147 in order to ensure compliance with OSHA regulatory requirements.

Certain equipment and systems may contain or operate using mechanical or electrical energy that is harmful or fatal to personnel. There is potential for workers to be injured by the unexpected start-up, operation or release of energy while being serviced. With standard, documented procedures in place and employees properly trained in them, the potential for injury is thereby greatly reduced or eliminated.

II. DEFINITIONS

1. **Energy Source:** All sources of actual or potential energy. This may include electrical, mechanical, hydraulic, pneumatic, chemical, thermal, etc.
2. **Lockout:** Is the physical protection placed on equipment and/or systems to prevent the flow of energy from a power source to a piece of equipment and keep it from operating. This can include a covering device to prevent movement of valves or electrical control, but must include a locking mechanism that prevents operation until the device is removed.
3. **Tagout:** The placement of a tagout device on an energy isolating device to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.
4. **Authorized Personnel:** Individuals trained in Lockout/Tagout and other energy control procedures and are qualified or licensed to work on specific systems or equipment. This may include employees and contractors.

Note: Contractors shall follow their procedures which must qualify with OSHA 29 CFR 1910.147

5. **Affected Personnel:** An employee whose job requires him/her to operate or use equipment on which servicing equipment is being performed under lockout/tagout or whose job requires him/her to work in an area in which such servicing is taking place.

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III. ASSIGNMENT OF RESPONSIBILITY & TRAINING

Authorized employee:

It is the responsibility of all Authorized employees who service/maintain equipment/systems to comply with this procedure.

Note: Contractors shall follow their procedures which must qualify with OSHA 29 CFR 1910.147

A list of authorized employees shall be maintained by the Facilities Department. All authorized employees must be properly trained prior to locking and/or tagging out equipment.

Only the authorized employee locking and/or tagging out the equipment may remove the same.

Note: An exception to this may be made in an emergency if the authorized employee is unavailable to remove the lock/tag provided the equipment/system **MUST** be restored and verification of work completion (verbal or walk down) is determined. Under these circumstances the Director of Facilities & Projects (or Transportation if applicable) may approve a responsible/qualified person to clear the lock/tag. Under these circumstances a note shall be placed in the authorized employee’s mailbox alerting them of the change.

Affected employee:

Affected employees shall have an awareness level of understanding of this procedure to ensure understanding of the importance of lockout/tagout devices and recognition that unauthorized removal/tampering could result in a serious injury and is a violation of this Program which is subject to disciplinary action.

Training:

The Director of Facilities & Projects (or Transportation if applicable) shall train all designated authorized employees & affected employees within their department and document the training (Attachment 1). They shall also ensure contractors under their control comply with their respective lockout/tagout process and are aware of the District’s lockout/tagout device(s). Building administrators shall ensure all affected employees within their facility have an awareness level of understanding of this procedure and provide documentation to the Director of Facilities and Projects (email, word document, etc.)

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IV. Procedure

A. Preparation:

Determine if the work requires the use of Lockout/Tagout. Lockout/tagout is not required if the work activity does not involve any energy source. If energy source(s) exist then a locking device and/or tag is required unless the component is powered from an electrical plug-in cord or a single source (switch, valve, etc.) that you will have **direct & un obscured** control over while doing the work.

There maybe more than one energy source that supplies a single piece of equipment. Be sure that you know and understand the types and magnitude of the energy sources. If you have any doubt, do not begin work without consulting your supervisor. Refer to Attachment #4 to develop and document Equipment Specific LO/TO procedural steps and boundaries.

B. Notification:

Notify any affected employees who will be in the area during your work while the lockout/tagout is in effect.

C. Shutdown:

Turn the equipment off by the normal means (Switch, button, key, lever, etc.)

D. Isolation:

De energize / Isolate the equipment by opening applicable breakers/disconnects, valves, etc.

Note: When isolation results in securing an area/piece of equipment not involved in the maintenance that needs to remain in service than the lock/tag maybe placed on the individual switch, etc. or the work shall be deferred to off hours.

E. Dissipation of Stored Energy:

This may mean bleeding pressurized lines (pneumatic/hydraulic/steam), releasing springs, draining capacitors, etc.

F. Installation of Lockout/Tagout Devices:

Install the Lock and/or Tag on the appropriate device(s). Fill out the Lockout/Tagout Activity Form.

G. Verification:

Verify the equipment is de energized by checking with a meter, tic-tracer, etc. If possible (I.E. not the tagged / locked device) operate the equipment using the normal (local) means.

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H. Restoration:

When the work activity has been completed inspect the area to insure that all tools, gear and supplies are clear of the equipment; that any operating devices are in the “off” position and that people are clear of the equipment. Remove the lockout/tagout devices and/or tags and re-energize the equipment. Verify normal operation. Document removal on the Lockout/Tagout Activity Form.

I. Record Keeping:

At the end of each month turn in the Lockout/Tagout Activity Form and any used “Out of Service Tags” for filing to the responsible Dept. Director.

V. Related Safety Information:

Hazards to be prevented by this procedure can take many forms. The most frequent form is electrical shock caused by unexpected power entering the equipment. Shocks can cause instant electrocution, burns and/or severe nerve damage and possibly death. Some electrical equipment contain Capacitors which can “discharge” their charge and cause severe shock.

Machines that have blades or parts that rotate, when unexpectedly energized, can cause severe cuts and catch clothing, pulling workers into mechanisms, resulting in severe injuries or death. Machines with belts or chain drives can pinch fingers/hands and arms and can also pull workers into other moving parts, resulting in serious injury or death.

Plumbing, hydraulic and heating lines may contain fluids or gasses under pressure that may escape unexpectedly, causing severe burns, death or damage to the facility, unless isolated and bled off.

Equipment with mechanical arms or other lifting devices may need to have the arms lowered or the extension device clamped/blocked to prevent unexpected movement. This may occur on trucks and other construction equipment. Springs kept under pressure during normal operation (assisted doors, valve actuators, etc.) may cause injury after power is turned off or pressure is relieved. Body extremities, face, etc. are at risk.

In general, good housekeeping on the job site is vital to safe work activity.

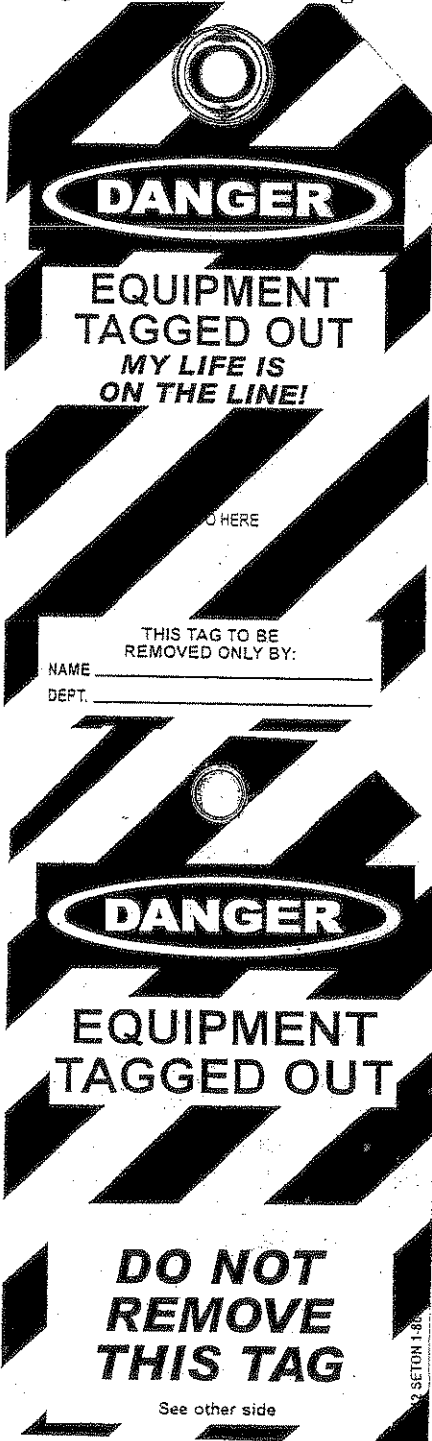
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Attachment # 3 - Tags

VI.

Tag # 1 - Personal Danger Tag

Tag #2 - Out of Service Tag



← Red & White

FRONT

Yellow →

← Red & White

BACK

Yellow →

TAG NO. 02568

OUT OF SERVICE
DO NOT USE

REASON _____

SIGNED _____ DATE _____

TAG NO. 02568

LOCATION _____

SIGNED _____ DATE _____

DO NOT REMOVE

SEE OTHER SIDE

Note: Actual Size and Color Different than depicted.

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Equipment Specific Lockout/Tagout
(Refer to attached LO/TO Sources of Energy/Hazards Matrix)

Machine or Equipment Name: _____

Date Implemented ____/____/____

Authorized employee name: _____

1. Affected employees to be notified:

2. Shutdown Procedure:

3. Isolation:

Energy Type/ Magnitude	Isolating Device	Location	Procedure

4. Blocking of Potential Mechanical Energy:

Hazard	Equipment Needed	Placement

5. Bleed Down of Potential Energy:

Energy	Bleed Down Point	Procedure

6. Verification/Zero Energy Test

Control(s) to try	Procedure to verify isolation

RETURN ALL CONTROLS TO "STOP" OR "OFF" POSITION AFTER TESTING!

Date Returned to Service ____/____/____

<p style="font-size: 2em; opacity: 0.5;">ORIGINAL</p> <p>MSAD #75 Safety and Health Program</p>	<p>LOCATION MSAD 75 School District</p>	<p>PROCEDURE NUMBER MSAD-75-006</p>
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MSAD 75 – LO/TO; Sources of Energy/Hazards

TYPES of ENERGY	QUALIFICATIONS (To implement LO/TO worker must be trained AUTHORIZED employee or Licensed Contractor)	KINETIC SOURCES	POTENTIAL SOURCES	ELECTRICAL SOURCES	THERMAL SOURCES
Types of SYSTEMS to be Isolated	N/A	EQUIPMENT EXAMPLES Consider De Energized State (position on loss of power) Standby Emergency Generators	EQUIPMENT EXAMPLES (Stored Energy) Pressure vessels, Gas tanks, Hydraulic or Pneumatic systems, springs, etc.	EQUIPMENT EXAMPLES Lighting, Appliances, motors, actuators, machinery, Dist. Panels, Motor Control centers, Switchgear, Emergency Lights/Exits	EQUIPMENT EXAMPLES Heaters Electric resistance coils
ELECTRICAL (AC/DC)	Contractor Elec. Licensed	Valve (Mech.) Actuators Pressure Maintenance Tanks Accumulators	Pressure Vessels, Piping, Valves, Pumps, Drains, Mains, Etc.	Motor Driven Actuators, Process System Sensors, Flow Switches, Pressure Switches, Garbage Disposals, etc.	Hot Water System, Kitchen Booster Heaters, Refrigeration, Coolant, Freon, etc.
LIQUID (Incompressible)	Contractor Sanitary – Licensed Authorized Employee	Air Actuators & Cylinders	Compressors, piping, tubing, regulators, air tanks, etc.	Motor Driven Actuators, Process System Sensors, Flow Switches, Pressure Switches, etc.	Air Preheaters
PNEUMATIC (Compressible)	Authorized Employee Contractor	N/A	Glycol, Science Drains, Chemical Storage Drains, Chemical Compatibility issues	Batteries	Chemical Compatibility
CHEMICAL (Hazardous/ basic/acidic)	Authorized Employee Input Chemical Hygiene Officer. Haz. Mat Contractor Contractor	Exhaust Dampers / Linkages	Piping, Boilers, valves, regulators, gas cylinders, Etc.	Flame Igniters	Burners, Cryogenics
GASEOUS (Natural, Propane, Vapor Flashpoint – LEL)	Qualified / Licensed Confined Space (if applicable). Hazards Assessment. Authorized Employee	Cylinder Stroke, Spring loaded failed position, linkages, Etc.	Pistons, Reservoirs, Lifts, etc.	Solenoid operated valves	Reservoir preheaters
HYDRAULIC (Oils/Lubricants)	Mechanic Authorized Employee Contractor	N/A	Piping, Vessels, Boilers, Valves, etc.	N/A	Saturated / Super Heated
STEAM (Vaporous)	Authorized Employee Contractor	Linkages, Arms, Yokes, pinch points, etc.	Blocks, Jacks, Lifts, Stops, Hydraulics	Ignition, Instruments, heaters, Batteries, etc.	Exhausts
Vehicle / Equipment	Transportation / B&G Authorized Employee Mechanic				