LOCKOUT/TAGOUT

Presented by:
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Endpoint Solutions

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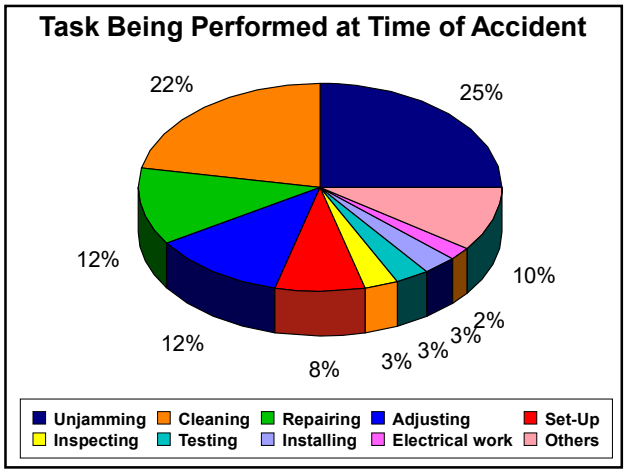
Task Being Performed at Time of Accident



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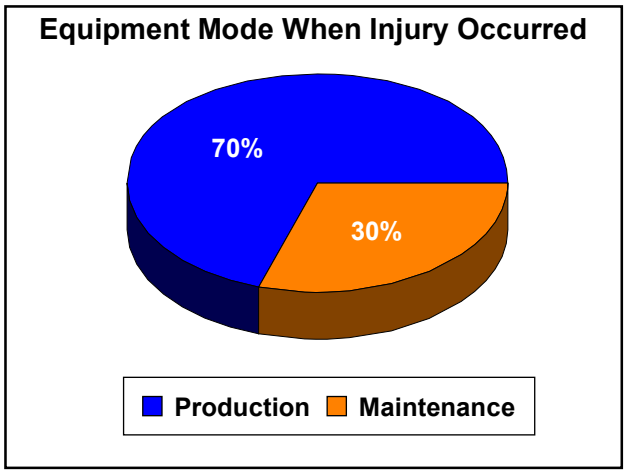
Equipment Mode When Injury Occurred



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Lockout/Tagout

Employer Responsibilities

- Maintain a written program.
- Train all affected and authorized employees in the requirements and limitations of lockout/tagout.
- Must audit lockout/tagout program.

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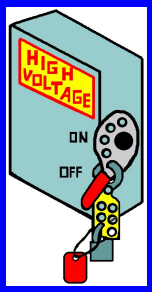
Lockout/Tagout

The placement of a lock and a tag at any point where equipment can be turned on or where any stored energy can be released, preventing the equipment from being turned on during repairs or maintenance.



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Lockout/Tagout

AUTHORIZED EMPLOYEES

- 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 his/her duties include servicing or maintenance covered under this section.

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Lockout/Tagout

AFFECTED EMPLOYEES

- 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.
- An employee whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

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Lockout/Tagout

AFFECTED EMPLOYEE TRAINING

- Each affected employee shall be instructed in the purpose and use of the energy control procedure.
- If equipment is locked or tagged out, do not attempt to start or operate the machine.
- Never attempt to remove a lock from any piece of equipment
- Failure to follow these guidelines will result in disciplinary action up to termination.

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Lockout/Tagout – Machine Specific Procedures

The procedures shall specifically outline the scope, purpose, authorization, rules, and techniques to be utilized for the control of hazardous energy, and the means to enforce compliance including, but not limited to:

- A specific statement of the intended use of the procedure;
- Specific procedural steps for shutting down, isolating, blocking and securing machines/ equipment to control hazardous energy;
- Specific procedural steps for the placement, removal and transfer of lockout/tagout devices and the responsibility for them; and
- Specific requirements for testing machine/ equipment to determine and verify the effectiveness of lockout/tagout devices and other energy control measures.

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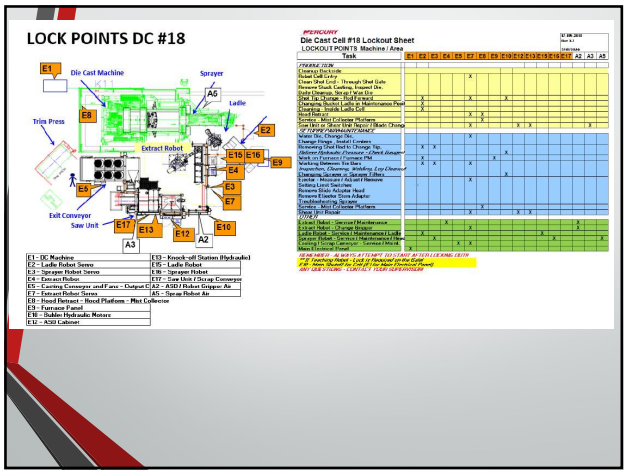

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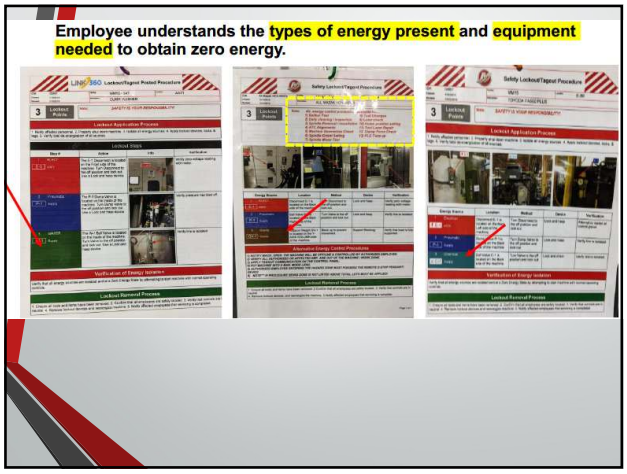

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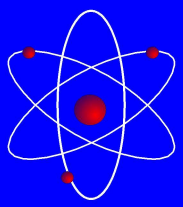
Lockout/Tagout

ENERGY SOURCES

- Electrical
- Mechanical
- Pneumatic
- Gas (steam)
- Hydraulic
- Thermal
- Water under pressure
- Gravity



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Lockout/Tagout

Stored 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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Lockout/Tagout

Protective materials & hardware

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

(ii) Lockout devices and tagout devices shall be singularly identified, shall be the only device(s) used for controlling energy; shall not be used for other purposes; and shall meet the following requirements:

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Lockout/Tagout

Protective materials & hardware

(ii)(A)(1) Durable. 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.

(ii)(A)(2) 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.

(ii)(A)(3) Tags shall not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored.

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Lockout/Tagout

Protective materials & hardware

(ii)(B) Standardized. 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.

(ii)(C)(1) 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.

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Lockout/Tagout

Protective materials & hardware

(iii) 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**

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Lockout/Tagout

Lockout/tagout must be performed in the following situations:

- **Whenever new equipment or machinery is being installed.**

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Lockout/Tagout

Lockout/tagout must be performed:

- Whenever service or maintenance is being performed on or around any machine where injury could result from unexpected start-up or the release of stored energy.

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.

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

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Lockout/Tagout

Lockout/tagout must be performed:

- When a guard or other safety device must be bypassed or removed.

"The witness reported (the employee) opened the interlock door, which is supposed to automatically cause the machine to shut down, and went under the machine to fix the belt. When he was finishing straightening the belts, the upper table retracted and came down, pinning his head, according to the report".

Source: The Freeman 2-4-04

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Lockout/Tagout

Lockout/tagout must be performed in the following situations:

- When an employee must place any part of his/her body where it could be caught by moving machinery.

NOTE: Authorized personnel must not only be aware of equipment they are working on, but also, moving machinery in the areas they are working, i.e. garage doors, fans, cranes, etc.

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Lockout/Tagout

Lockout/tagout must be performed in the following situations:

- Whenever new equipment or machinery is being installed.
- Whenever service or maintenance is being performed on or around any machine where injury could result from unexpected start-up or the release of stored energy.
- When a guard or other safety device must be bypassed or removed.
- When an employee must place any part of his/her body where it could be caught by moving machinery.

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Lockout/Tagout

PROCEDURE

- Notify affected employees and the supervisor.
- Shut down equipment
- Isolate machine from energy source(s).
- Lock and tag out the energy source(s).
- Attach tag with your name on the lock.

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Lockout/Tagout

Lockout or tagout devices shall be affixed to each energy isolating device by authorized employees.

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 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.

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Lockout/Tagout

PROCEDURE

- Notify affected employees and the supervisor.
- Shut down equipment
- Isolate machine from energy source(s).
- Lock and tag out the energy source(s).
- Attach tag with your name on the lock.
- Release stored energy (if any).
- Test to make certain equipment will not operate.

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Lockout/Tagout

Verification of Isolation

- Prior to working on a machine/piece of equipment, the authorized employee shall verify that all energy sources have been de-energized by;
  - •Operating start buttons, toggle switches, or other normal operating controls.
  - •Return all operating control switches to the "Off" position after verifying the Lockout is complete.

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Lockout/Tagout

Equipment Testing or Positioning. OSHA allows the temporary removal of lockout or tagout devices and the reenergization of the machine or equipment ONLY during the limited time necessary for the testing or positioning of machines, equipment of components. After the completion of the temporary reenergization, the authorized employees shall again deenergize the equipment and resume lockout/tagout procedures.

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Lockout/Tagout

MINOR SERVICING TASKS

Employees performing minor tool changes and adjustments and/or other minor service activities *during normal production operations* that are routine, repetitive, and integral to the use of the production equipment are not covered by the lockout/tagout standard, provided the work is performed using alternative measures that give effective protection.

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Lockout/Tagout

This standard does not apply to work on cord and plug connected electric equipment for which exposure to the hazards of unexpected energization or startup of the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the exclusive control of the employee performing the servicing or maintenance.

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Lockout/Tagout

The plug is under the exclusive control of the employee if it is physically in the possession of the employee, or in arm's reach and in line of sight of the employee, or if the employee has affixed a lockout/tagout device on the plug.

The company lockout/tagout procedures required by the standard at 29 CFR 1910.147 (c)(4) shall specify the acceptable procedure for handling cord and plug connected equipment.

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Lockout/Tagout

RESTORING TO SERVICE

- Inspect equipment/machine to ensure it can be restarted safely.
  - •Remove tools
  - •Replace guards
  - •Verify controls are in the off or neutral position.
- Notify affected employees that work is complete and power is going to be restored.
- Remove lockout device.
- Test machine to confirm proper operation.

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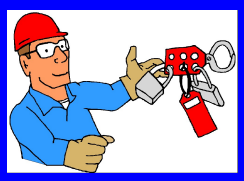
Lockout/Tagout

GROUP LOCKOUT/TAGOUT

- Each employee must attach a lock and tag by use of hasp or other service.
- When an employee completes work, only he/she can remove own lock and tag.



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Lockout/Tagout

MULTI-SHIFT LOCKOUT/TAGOUT

- Locks must be changed at each shift change.
- If locks cannot be changed, follow documented company procedures and train all personnel.
  - •Verify authorized employee not in the facility
  - •Verify lock can be safely removed.
  - •Designated person can then remove lock.
  - •Contact owner of lockout device to inform owner of the removal before the next shift.

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Lockout/Tagout

Periodic Inspection

(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.

(i)(A) The periodic inspection shall be performed by an authorized employee other than the one(s) utilizing the energy control procedure being inspected.

(i)(B) The periodic inspection shall be conducted to correct any deviations or inadequacies identified.

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Lockout/Tagout

Periodic Inspection

(ii) The employer shall certify that the periodic inspections have been performed. 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.

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Lockout/Tagout

TRAINING

- Authorized employees shall receive training in:
  - Recognition of applicable hazardous energy sources,
  - the type and magnitude of the energy available in the workplace,
  - methods and means necessary for energy isolation and control.
- Affected employees
  - shall be instructed in the purpose and use of the energy control procedure.
- All other employees who are or may be in an area where energy control procedures may be utilized,
  - about the procedure, and about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out.

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Lockout/Tagout

RETRAINING

- **Change in equipment/process that presents new or different hazard.**
- **Change in lockout/tagout procedures.**
- **Change in job assignments.**
- **Deficiency noted as result of an audit to the program.**

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Lockout/Tagout

Other standards incorporating lockout/tagout. Forklifts. Trucks in need of repairs to the electrical system shall have the battery disconnected prior to such repairs.

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Lockout/Tagout

Power Press. The employer shall provide die stops or other means to prevent losing control of the die while setting or removing dies in presses which are inclined. The employer shall provide and enforce the use of safety blocks for use whenever dies are being adjusted or repaired in the press. Safety block means a prop that, when inserted between the upper and lower dies or between the bolster plate and face of the slide, prevents the slide from falling of its own deadweight.

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Lockout/Tagout

Outside Personnel (contractors, etc.)

(i) Whenever outside servicing personnel are to be engaged in activities covered by the scope and application of this standard, the on-site employer and the outside employer shall inform each other of their respective lockout or tagout procedures.

(ii) The on-site employer shall ensure that his/her employees understand and comply with the restrictions and prohibitions of the outside employer's energy control program.

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