



Company Name: _____ Job Site Location: _____
 Date: _____ Start Time: _____ Finish Time: _____ Foreman/Supervisor: _____

Topic 29: Lockout/Blockout/Tagout

Introduction: Failure to *Lockout/Blockout-Tagout* machinery and equipment before working on it is a major cause of serious injury. Workers are electrocuted, or lose fingers, hands, arms, or suffer severe crushing injuries because machinery is inadvertently turned on while it is being maintained, repaired, or adjusted. *Lockout/Blockout-Tagout* means that any energy source – whether electrical, hydraulic, mechanical, compressed air, or any other source that might cause unexpected movement – must be disengaged or blocked, and electrical sources must be de-energized and “**LOCKED**” or positively sealed in the **OFF** position. Even a locked-out machine may not be safe if there are parts of the machine that are not “**BLOCKED**” to prevent inadvertent movement. **Potential energy** that may need to be blocked can come from suspended parts, subject to gravity, or may be energy stored in springs. There is a difference between turning off a machine and actually disengaging or de-energizing a piece of equipment.

- **Lockout** places a device such as a keyed or combination lock, or a bolted securing cover to ensure that energy cannot be transmitted to a system to allow movement or energizing of that system. Energy may come from an electrical, hydraulic, pneumatic, or mechanical source. Energy may be transmitted by means of a manually operated circuit breaker or disconnect switch, a line valve, or any means of supplying energy to a machine or system.
 - **Blockout** physically restrains a part or mechanical system to prevent movement totally or in a direction which would pose a danger to personnel. Restraints may be by pinning, bolting, use of a restraining arm, blocking, or any method which will not slip or move until intentionally removed.
 - **Tagout** means to place a “**Warning/Danger: Do Not Operate**” tag on the locking mechanism attached to the disabled equipment. **DO NOT USE TAGS ALONE!** Use tags or signs in addition to locks. Tags must state the reason for the lockout, the name of the employee who is working on the equipment and how that person may be reached, and the time the tag was put in place.
- The best way* to put into practice an effective *Lockout/Blockout-Tagout* program is to first prepare a written, standardized operating procedure, then carry out the necessary training and responsible supervision.

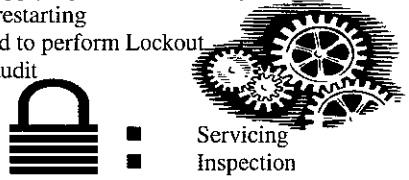


When setting-up a written Lockout/Blockout-Tagout procedure, consider the following:

- Job objectives and equipment involved
- Detailing the energy sources for each machine and Lockout procedure
- Steps for shutting down and securing machinery
- Steps to verify Lockout effectiveness
- Procedural steps for applying Lockout and Tagout
- Procedural steps for restarting
- Employees authorized to perform Lockout
- Annual compliance audit

The applicable Lockout/Blockout-Tagout procedure should be used for any activities such as:

- Construction
- Installation
- Set-up
- Modifications
- Maintenance
- Repair
- Servicing
- Inspection



OSHA requires Lockout/Blockout-Tagout procedures if: Personnel are required to remove or bypass any guard or safety system, or are required to place any part of their body into any area of operations or a danger zone associated with a machines operating cycle.

These steps should be followed in this order to ensure that the Lockout/Blockout-Tagout procedure will be properly employed:

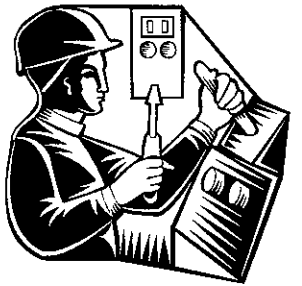
- ① Prepare to Shut-down; stop feed, allow all product to discharge, conveyors to empty, etc.
- ② Initiate and verify Shut-down
- ③ Disconnect or isolate equipment, or machine from other systems.
- ④ Apply the appropriate **Lockout/Blockout** device
- ⑤ Release stored energy; electrical charge, pneumatic or hydraulic pressure, etc.



Lockout/Blockout devices should be painted or otherwise marked for high visibility. If more than one shift is involved in the work being done, the authorized person should remove his **Lockout** device and at the same time the authorized person from the succeeding shift should install their own **Lockout** device to ensure continuous protection.

These steps should be followed in this order before re-energizing equipment or machinery:

- ① Clear the equipment or machinery of all tools and materials
- ② Make sure all employees are clear and notified of intent or re-start
- ③ Remove **Lockout/Blockout** device
- ④ Verify all personnel are clear
- ⑤ Start-up equipment or machine



Conclusion: Careful attention to the above described **Lockout/Blockout-Tagout** procedures will help keep everyone safe when maintenance and repair operations are being performed on equipment and machinery.

Work Site Review

Specific Work-Site Hazards and Safety Suggestions: _____
 Personnel Safety Violations: _____

Employee Signatures: _____
 (My signature attests and verifies my understanding of and agreement to comply with, all company safety policies and regulations, and that I have not suffered, experienced, or sustained any recent job-related injury or illness.)

Foreman/Supervisor's Signature: _____

These guidelines do not supercede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.