

LOCKOUT/TAGOUT

1. REQUIREMENTS AND PROCEDURES

1.1. Purpose – To establish requirements and procedures to prevent the unintended release of energy – electrical, potential, gravity, hydraulic, pneumatic, etc. – which may energize an electrical circuit or a machine or cause a machine or machine part to unexpectedly move or fall, causing injury to any employee.

1.2. Definitions

- A. **Affected Employee** – 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, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.
- B. **Authorized Employee** – 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 that employee's duties include performing servicing or maintenance covered under this section.
- C. **Energy Isolation Device** – A mechanical device that physically prevents the transmission or release of energy, including but not limited to a manually operated electrical circuit breaker; a disconnect switch; a line valve; or a block, a chock or cribbing used to block or isolate energy.
- D. **Lockout** – The placement of a lockout device, such as a keyed lock, 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.
- E. **Lockout Device** – 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. Included are blank flanges and bolted slip blinds.
- F. **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.
- G. **Tagout** – The placement of a tag, in conjunction with a lockout device, on an energy isolating device, in accordance with an established procedure, to indicate the owner of the lockout device.
- H. **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 tagout device is removed.

1.3. General Requirements

- A. THE COMPANY** shall make locks and tags available to all employees who might perform servicing and/or maintenance operations on machinery and/or equipment.
- B. Each person performing servicing and/or maintenance work on machinery and/or equipment shall apply his/her own lock and tag. The key to the lock shall be kept with them while they are performing the work on the machinery and/or equipment.
- C. Only one key shall be allowed for any locks used in the lockout/tagout procedure. Master-keyed locks or match-keyed locks shall not be used in the lockout/tagout procedure.
- D. A survey of each operation shall be conducted to identify the energy hazards that exist and where they are located. Specific energy control procedures (lockout/tagout procedures) shall be developed for each piece of equipment or machinery. (Refer to the sample of these procedures provided in this section. This sample and the accompanying blank form shall be used to develop and document site specific procedures for each machine or piece of equipment requiring an energy control procedure.) An alternative lockout/tagout procedure format may be used upon approval of the Safety Department.
- E. The energy control procedures shall 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, the following:
- A specific statement of the intended use of the procedure.
 - Specific procedural steps for shutting down, isolating, blocking and securing a machine or a piece of equipment to control hazardous energy.
 - Specific procedural steps for the placement, removal and transfer of lockout devices or tagout devices and the responsibility for them.
 - Specific requirements for testing a machine or a piece of equipment to determine and verify the effectiveness of lockout devices, tagout devices and other energy control measures.
- F. Energy control procedures need not be documented for a particular machine or piece of equipment when all of the following exist:
- The machine or piece of equipment has no potential for stored or residual energy or re-accumulation of stored energy after shut down which could endanger employees.
 - The machine or piece of equipment has a single energy source, which can be readily identified and isolated.
 - The isolation and locking out of that single energy source will completely de-energize and deactivate the machine or piece of equipment.

- The machine or piece of equipment is isolated from that single energy source and locked out during servicing or maintenance.
 - A single lockout device will achieve a locked-out condition.
 - The lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance.
 - The servicing or maintenance does not create hazards for other employees.
 - The employer, in utilizing this exception, has had no accidents involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.
- G. Energy control procedures shall be utilized for the control of potentially hazardous energy when employees are engaged in performing any servicing and/or maintenance work on powered machinery or equipment. If work is being performed on portable power tools, they should be physically disconnected from the energy source in preparation for the work.
- H. No person shall perform any servicing and/or maintenance work on powered machinery or equipment until all power sources have been de-energized and locked-out and tagged-out. This shall be accomplished by adhering to the following lockout/tagout procedure:
- Only authorized employees shall lockout or tagout machines or equipment in order to perform servicing or maintenance on that machine or equipment.
 - All employees affected by the de-energizing of the equipment shall be notified of the application and removal of lockout/tagout devices. Notification shall be given before the controls are applied, and after they are removed from the machine or piece of equipment.
 - The type and source of energy/power needing to be de-energized and/or controlled shall be determined.
 - The equipment shall be shutdown by normal shut down procedures.
 - The power/energy source shall be de-energized or controlled by either “throwing” the respective power switch(es) or by removing the ignition key and/or battery leads.
 - Personnel energizing or de-energizing the power source by “throwing” the respective power switch shall stand to the side of the switchgear and look away to avoid possible injury in the event that the switchgear would explode.
 - The energy isolating devices shall be locked-out/tagged-out with individual locks and tags. **Note:** Combination locks are prohibited for use in any lockout procedure for all machines and equipment. Tags shall state **“Do Not Operate”** and shall identify the owner of the tag and associated lock.
 - The equipment shall be tested to ensure the energy/power source has been isolated. After ensuring that no personnel are exposed, check to ensure that energy sources are disconnected by operating the normal controls to make certain the equipment will not operate or move.

- Return operating controls to the “neutral” or “off” position after the test.
 - The equipment is now locked-out and tagged-out and maintenance/repair operations can begin.
- I. No person shall perform any servicing and/or maintenance work on powered machinery or equipment until all energy sources have been isolated, locked-out and tagged-out by them personally to prevent the unintended release of energy – electrical, potential, gravity, etc., which may cause the machine or machine part to unexpectedly move or fall.
- This shall be accomplished by the lockout/tagout procedure described above. Additionally, stored energy shall be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.
- J. Whenever outside servicing and/or maintenance contractors are to be engaged in activities covered by the scope and application of energy control procedures covered in this section:
- **THE COMPANY** and the outside contractor shall inform each other of their respective lockout/tagout procedures.
 - **THE COMPANY** shall ensure that his/her employees understand and comply with the restrictions and prohibitions of the outside contractor’s energy control program.
- K. Upon completion of their assigned servicing and/or maintenance work and when they are no longer exposed to hazards that could result from an uncontrolled release of energy, individuals shall remove their own locks and tags.
- L. Failure of an individual to remove his/her own lock and tag upon the completion of their assigned tasks, can result in the affected machinery or piece of equipment not being placed back into service in a timely and efficient manner. However, in emergency situations where the person who installed a lock and tag failed to remove their lock and tag and are unavailable, the following procedure shall be followed:
- Upon determining that all persons are removed from the affected area of the machinery or piece of equipment and that the maintenance/repair work has been completed, the “fill in title” can remove the lock and tag.
 - If the “fill in title” is not present at the site, the supervisor who is in charge shall contact the “fill in title” and obtain verbal approval to remove the lock and tag. Upon receipt of verbal approval, the lock and tag shall only be removed after determining that all persons are removed from the affected area of the machinery or piece of equipment and that the maintenance/repair work has been completed.
 - The following procedure shall be followed when restoring power/energy to machinery or a piece of equipment:
 - Upon completion of maintenance/repair operations and the equipment is ready for normal production operations, all guards shall be re-installed and all tools shall be removed from the machinery or piece of equipment.

- The area shall be checked to ensure that all other employees have left the affected area of the machinery or piece of equipment, that no one will be exposed to a hazard which could result from an uncontrolled release of energy and that all locks and tags have been removed from the isolation devices.
- The energy isolating devices shall be operated to restore energy to the machine or piece of equipment.

1.4. Training

- A. Authorized employees will be instructed in the recognition of applicable hazardous energy sources, the type and magnitude of the various energy sources found in the workplace, the acceptable lockout/tagout procedures necessary for energy isolation and control, procedures for removing locks and tags and procedures for restoring energy.
- B. Affected employee shall be instructed in the purpose and use of the energy control procedures. All other employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked out or tagged out.
- C. Retraining will be provided when there is a change in job assignment, a change in equipment or processes that would create a new hazard, or a change would occur in the company's lockout/tagout policy.
- D. Lockout/Tagout will be a periodic safety-training topic.

1.5. Monitoring and Enforcement – The “fill in title,” his designee and other managers, when present, shall be responsible for implementation and enforcement of this policy. Failure to follow established lockout/tagout procedures shall result in an employee receiving disciplinary action up to and including termination of employment.

1.6. Record Keeping

- A. The “fill in title” or his designee shall maintain all records including energy control procedures, annual inspections and training records.
- B. Training shall be documented by means of “Training Documentation Forms” and/or “Safety Meeting Forms.” Training records shall be retained for a period of three years from the date of the training and shall include the following information:
 - Employee’s name.
 - Date of training.
 - Outline describing the training material.
 - Signature of trainer documenting that training was provided.
 - Signature of employee documenting that training was received.

1.7. Annual Review and Inspection

- A. The Lockout/Tagout Safety Policy annual plan review shall include an inspection of all energy control procedures to ensure that the procedure and all regulatory and company requirements are being followed.
- B. The “fill in title” and respective Safety Department shall be responsible for ensuring that the inspections are completed annually, for ensuring that the energy control procedures are updated in accordance with the findings of the inspections and for documenting/certifying the completion of the review process. All completed reviews shall be documented/certified by completing the form entitled “Lockout Tagout Inspection Checklist,” included in this section.
- 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.
 - An authorized employee other than the one(s) utilizing the energy control procedure being inspected shall perform the periodic inspection.
 - The periodic inspection shall be conducted to correct any deviations or inadequacies identified.
 - The annual inspection shall include a review, between the inspector and each authorized employee, of that employee’s responsibilities under the energy control procedure being inspected.
 - In isolated cases, where lockout is not possible and only tagout is used for energy control, the annual inspection shall include a review, between the inspector and each authorized and affected employee, of that employee’s responsibilities under the energy control procedure being inspected, and the limitation of tags.
 - Employees found to be in violation of the lockout procedures will be retrained and shall be subject to disciplinary procedures.

2. STATUTORY REFERENCES

- 2.1. 29 CFR § 1910.147 – The control of hazardous energy (lockout/tagout).
- 2.2. 29 CFR § 1910.333 – Selection and use of electrical work practices.

LOCKOUT/TAGOUT

ENERGY SOURCE PROCEDURES (Included in this Section)

1. MAIN AGGREGATE HOPPER
2. MAIN AGGREGATE HOPPER SUMP PUMP
3. MAIN AGGREGATE CONVEYOR, TRANSFER CHUTE AND CAST AGGREGATE CONVEYOR
4. MACHINE PLANT ROTARY TURNCHUTE
5. CAST PLANT ROTARY TURNCHUTE
6. MACHINE PLANT BATCH TOWER
7. CAST PLANT BATCH TOWER
8. MACHINE PLANT SILO BAGHOUSE
9. CAST PLANT SILO BAGHOUSE
10. MACHINE PLANT SILO BUTTERFLY VALVE AND SCREW CONVEYOR
11. CAST YARD SILO BUTTERFLY VALVE AND SCREW CONVEYOR
12. MACHINE PLANT WEIGH HOPPER CLAMGATE
13. CAST PLANT WEIGH HOPPER CLAMGATE
14. MACHINE PLANT AGGREGATE HOPPER FLOP-CHUTE
15. CAST PLANT AGGREGATE REVERSING CONVEYOR
16. MACHINE PLANT MIXER BAGHOUSE
17. CAST PLANT MIXER BAGHOUSE
18. PH 60 MIXER
19. PH 84 MIXER
20. CAST PLANT MIXER
21. PH 60 MIXER CONVEYOR
22. PH 84 MIXER CONVEYOR
23. PH 60 PIPE MACHINE
24. PH 84 PIPE MACHINE
25. RADIAL STACKER AND PH 84 MUDHOPPER CONVEYOR
26. PH 84 PIT CONVEYOR
27. PH 84 WASTE CONVEYOR
28. DRY CAST MATERIAL CONVEYOR
29. DRY CAST MUDHOPPER CONVEYOR
30. DRY CAST RADIAL CONVEYOR
31. ROBBINS & MEYERS 7½ TON BRIDGE CRANE
32. DRESSER 25-TON BRIDGE CRANE
33. YORK-SHIPLEY BOILER
34. PH 60 MOVING FLOOR AND CURING SYSTEM
35. PH 84 STEAM CURING SYSTEMS
36. OUTSIDE CURING STATIONS
37. WIRE ROLLER MACHINES
38. HYDRAULIC BENDER
39. WELDING EXHAUST FANS



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LOCKOUT/TAGOUT

HCP ENERGY CONTROL PROCEDURE

Hanover Pipe Plant

Machine Name: Main Aggregate Hopper Location: Raw Material Receiving Area

SPECIAL NOTES: THE BALL-VALVE LOCKOUT FOR THE AIR OPERATED HOPPER VIBRATOR AND CLAMGATE IS LOCATED BEHIND THE PH84 MIXER ON THE NORTH/CENTRAL WALL OF THE MACHINE PLANT. WORK THAT REQUIRES ENTRY INTO THE MAIN AGGREGATE HOPPER WILL CONFORM WITH HCP CONFINED SPACE ENTRY PROCEDURES. ALL GUARDING MUST BE IN PLACE WHEN EQUIPMENT IS IN OPERATION. GUARDS MAY NOT BE REMOVED OR BY-PASSED WITHOUT PROPER LOCK-OUT/TAG-OUT PROCEDURES.

ENERGY SOURCES APPLICABLE TO THIS EQUIPMENT

ELECTRICAL HYDRAULIC MECHANICAL THERMAL PNEUMATIC
STEAM WATER ELEVATED MACHINE MEMBERS SPRINGS
COMPRESSED GAS RADIO FREQUENCY OTHER : Block feed access

LOCKOUT/TAGOUT PROCEDURE - NOTIFY ALL AFFECTED INDIVIDUALS AND PROCEED AS FOLLOWS. NOTIFY MANAGEMENT IN THE EVENT OF ANY ABNORMAL SITUATION

1. SHUT OFF HOPPER VIBRATOR/CLAMGATE AND WAIT UNTIL *ALL COMPONENTS ARE COMPLETELY STOPPED.*
2. SHUT OFF THE MAIN AGGREGATE CONVEYOR DISCONNECT. BLOCK OR CHAIN ANY PORTIONS OF THE MACHINE WHERE REQUIRED. BLEED OFF ANY PNEUMATIC PRESSURE IN LINES.
3. LOCK AND TAGOUT THE PNEUMATIC (AIR) BALL VALVE AND MAIN AGGREGATE DISCONNECT. *TEST ALL CONTROLS PRIOR TO BEGINNING WORK..*
4. MACHINE IS NOW SAFE, PROCEED WITH REPAIR OR ADJUSTMENT.
5. COMPLETE TASK, DOUBLE CHECK REPAIR WORK OR MACHINE ADJUSTMENT.
6. CLEAR AREA OF TOOLS AND EQUIPMENT; NOTIFY ALL AFFECTED EMPLOYEES OF IMPENDING RESTART OF MACHINE OR EQUIPMENT.
7. REMOVE LOCKOUT-TAGOUT DEVICES.
8. PROCEED WITH RESTART OF MACHINE OR EQUIPMENT.

ENERGY CONTROL DEVICES NEEDED:

LOCK(S) TAG(S) HASP(S) PLUG COVER BOX
CHAIN BLOCK PIN OTHER(S) : _____



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