



## Lockout/Tagout Program

This program will be followed when performing service or maintenance (adjusting, repairing, servicing, installing, etc.) on any equipment, machinery or process where there is a potential for the release of energy, electricity or machine motion which could cause injury. Any time workers shut down equipment to protect themselves from injury, lockout/tagout must be used. For minor servicing where workers would normally leave the equipment running and guards in place, lockout is not necessary. Energy sources include: electrical, mechanical, hydraulic, pneumatic, chemical, compressed gases, thermal, and gravitational.

- 1) Physical Plant Maintenance staff will be trained in this lockout/tag out program before servicing any equipment or machinery where lockout/tag out is necessary. The training will include:
  - a) Recognition of hazardous energy sources
  - b) Methods and means of energy isolation and control
  - c) Energy control procedures, including multiple worker lockout
  - d) Prohibition of starting up equipment/machinery that is locked or tagged
  - e) Limitations of tags
  - f) Department procedures to follow if a worker is not present to remove his/her lock
- 2) Specific shut down and lockout procedures will be developed in writing for each piece of equipment or machinery using the attached form. Maintenance staff will be familiar with these procedures and follow this sequence in de-energizing and locking out and tagging the equipment/machinery. The attached form will be used to outline all procedures followed in de-energization and locking out of the specific equipment/machinery. Where feasible, these specific procedures will be kept posted at the corresponding machinery and with the Maintenance Supervisor.

Exceptions: It is not necessary to fill out this form for de-energizing and lock out when all of the following are in place:

- a) Machine/equipment has no stored energy
- b) There is a single energy source needing only a single lock
- c) This single source can be isolated, completely de-energized and locked

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- d) The lock is under the exclusive control of the person performing the work
  - e) The work does not create a hazard for others
  - f) Past experience using this exception for this task has yielded no accidents/concerns.
- 3) Special Procedures:
- a) Compressed gases or compressed air can present a significant health or physical hazard. Lockout/tagout procedures apply to these systems. Lock main line in off position, and isolate by disconnect, blanking, bleeding.
  - b) Hydraulics: lock in off position and disconnect and bleed off residual pressure.
  - c) Gravity: use safety blocks or other mechanical devices.
- 4) All locking devices and tags will be provided by Physical Plant. Tags and locks are available to Maintenance staff in the safety supply cabinet in the Physical Plant supply room.
- 5) Group lockout will be used when more than one worker is servicing the equipment/machinery. Each worker will affix his/her own lock.
- 6) If shift or personnel changes occur, continuity of lockout will be followed. The incoming worker must affix his lock before the outgoing worker removes his/her lock.
- 7) If an energy isolating device is not capable of being locked out, a tag only will be used. Additional means to prevent accidental start up such as isolating a circuit element, blocking a control switch, opening an extra disconnecting device, or the removal of a valve handle will be noted in the procedures and followed. When tags only are used, workers must be aware that:
- a) They do not provide a physical restraint
  - b) The tag can only be removed by the person who affixed it
- Workers will notify their supervisor when only tags are used. The supervisor will determine if any additional steps, such as a watch, is necessary.
- 8) Each lock or tag must only be removed by the worker who affixed it. If the worker is not available to remove it, the lock can only be removed under the direction of the Director of Physical Plant or the Director of EHS, or their designee: the Assistant Director or the Maintenance supervisor. The following procedures will be followed:
- a) Verify that the worker who applied the lock is not available
  - b) Make all reasonable efforts to contact this same worker to inform him that his/her lock or tag is about to be removed
  - c) Ensure that all work on the equipment is completed, the work area is clear and all other affected departments/workers have been notified that start up is about to proceed.
  - d) Ensure that all other step in the start up process for this equipment/machinery has been completed

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- e) Ensure that the worker whose lock/tag was removed has knowledge of this before he/she resumes work.
- 9) If locks/tags must be temporarily removed for testing or positioning of equipment/machinery, the start up sequence listed in the specific written procedure will be followed. As soon as testing/positioning is completed, de-energization and lockout will be re-applied in the same manner.
- 10) Outside contractors: when servicing equipment/machinery, the contractor must inform HVCC of his lockout procedures and where applicable, the contractor must be aware of HVCC lockout procedures. Maintenance or other HVCC staff must be aware of the lockout if it will affect their work.
- 11) The Director of EHS will review this program annually with Maintenance supervisors and staff and update as necessary, including any necessary changes to the specific equipment/machinery procedures. The review will include an annual refresher training of maintenance staff regarding the procedures they are to follow as outlined in this program.

## SPECIFIC SHUTDOWN PROCEDURE

**Machine/Equipment:** \_\_\_\_\_

**Location:** \_\_\_\_\_

**Type & magnitude of energy:** \_\_\_\_\_

**Follow this sequence for proper shutdown:**

1. Notify the following people of the shut down (affected departments, supervisors, etc.):

\_\_\_\_\_

2. Follow this sequence for locating and shutting off each energy isolating device:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Place the following locking devices and tags at each shutoff point: *(multiple workers will each apply a lock)*

\_\_\_\_\_  
\_\_\_\_\_

4. Release or stop any stored energy or pressure by: *(blocking, bleeding, isolating, etc.):*

\_\_\_\_\_  
\_\_\_\_\_

5. Verify that de-energization is complete *(activate control switch, test circuits, etc):*

\_\_\_\_\_  
\_\_\_\_\_

6. After work is completed follow these start up procedures:

- a. Remove all tools and materials from around machine/equipment
- b. Check to assure machine/equipment is operationally intact
- c. Ensure safe clearance distances, if applicable
- d. Notify affected departments, staff, supervisors of start-up
- e. Remove all locks and tags *(only the worker who applied the lock may remove it; if a worker is not available to remove lock, contact you the Director of Physical Plant or the Director of EHS before start up)*
- f. Add other specific start up procedures here:

\_\_\_\_\_  
\_\_\_\_\_

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