

## CHAPTER 24

## THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

1. PURPOSE. This procedure establishes the minimum requirements for the lockout or tagout of energy isolating devices. It shall be used to ensure the machine or equipment are isolated from all potentially hazardous energy, and locked out or tagged out before employees perform any servicing or maintenance activities where the unexpected energization, start-up or release of stored energy could cause injury. Lockout/Tagout procedures apply to equipment and machinery that if unexpected energization, movement, or release of stored energy occurs during maintenance, could cause injury to employees or damage to equipment. This procedure establishes minimum performance requirements for the control of such hazardous energy.

2. APPLICATION. This chapter applies to all Center machinery or equipment which contains/utilizes a hazardous energy source and on which maintenance or servicing by Center employees is expected. It does not apply to work being performed on cord and plug connected electrical equipment. Employees servicing or performing maintenance on this type of equipment have total control over whether or not power is applied.

3. DEFINITIONS.

a. ENERGY ISOLATING DEVICE. A device that when turned to the off or closed position stops the flow of energy. These devices include Valves, Electrical Breakers, and Control Switches.

b. 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. The attachment of this device shall indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed. The Tagout device shall be attached with a non-reusable, self-locking device and should be a one-piece, environmentally-tolerant cable tie(Exhibit 24A).

c. TAGOUT. For the purpose of this instruction tags are cards that can be securely attached to the energy isolating device of the equipment. They are used to clearly identify the equipment which, if activated, could cause injury to employees or damage to equipment. Tagout is the placement of a tag and tagout device on an energy isolating device. This placement indicates that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

d. LOCK. An issued, key type padlock identified by name, code, and telephone number of the user. This lock shall be used to physically prevent the operation of the energy isolating device. All locks shall be approved by the Safety Program Office. There are two types of locks and tags. Personal locks and Shop Locks (Exhibit 24A). Personal locks are locks that only the

employee and his/her immediate supervisor have keys for it. Shop locks are locks that all authorized personnel in the shop may have a key. The Shop Lock is installed on energy isolating devices that will be locked out for an extended period of time greater than one shift. These locks are not to be used for any other purpose except for locking out equipment.

e. LOCKOUT DEVICE. A mechanical device which can be held closed by attaching a lock through any one of several pairs of lockout holes. A lockout device enables one or more employees to individually lockout an energy isolating device.

f. GROUP LOCKOUT. This is a procedure that allows for the lockout of equipment when a crew/shop is working on one isolated piece of equipment. The shop supervisor is the only person that is authorized to place and remove a Group Lock from an energy isolating device.

4. GENERAL. Lockout is the preferred method of isolating machines or equipment from energy sources. Tagout devices provide a false sense of security and do not offer the same level of employee protection as a lockout device. Tagout devices may only be used, by themselves, when the energy isolating device is not capable of being locked out. The use of a tagout device shall be approved by the OSH Office. All equipment shall be lock and/or tagged out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Do not attempt to operate any switch, valve or other energy isolating device when it is locked and/or tagged out of service. No person may remove the personal lock or tag of another individual. If an employee inadvertently leaves a personal lock, shop lock or tag on an energy controlling device it may only be removed after his/her immediate supervisor personally verifies that it is safe to remove. All such instances shall be fully investigated and documented.

5. OUTLINE OF GENERAL PROCEDURES (Exhibit 24B). Prior to locking or tagging any equipment or apparatus energy source for repairs or maintenance the employee shall consult the Energy Isolation Plan, attached to the machine, for the specific type, location and method of securing the desired source. If the apparatus does not have the Energy Isolation Plan attached, the employee shall consult with the area supervisor for the written plan. If a written plan is not available or done for a particular piece of machinery or equipment, the area supervisor shall survey the equipment and document all sources of energy, types of lockout devices to be used and all additional safety measures.

a. SEQUENCE OF LOCKOUT AND TAGOUT PROCEDURE

(1) Notify all affected employees that a lockout and tagout system is going to be utilized and the reason therefore.

(2) If the machine or equipment is operating, shut it down by the normal stopping procedure.

(3) Operate the energy isolating device(s) so that the equipment is isolated from its energy source(s). Stored energy (such as springs, elevated machine members, rotating flywheels, hydraulic systems, air, gas, steam or water pressure, etc.) must be dissipated or restrained.

(4) Lockout the energy isolating device with an assigned individual lock, or shop lock. Completely fill out the tag and secure it to the lock.

(5) After ensuring that no personnel are exposed, and as a check on having disconnected the energy sources, operate the controls to make certain the equipment will not operate. For electrical equipment a suitable meter should be used to verify that no voltage is present.

**CAUTION:** Return operating controls to "neutral" or "off" position after the test.

(6) The equipment is now locked and tagged out of service.

b. RESTORING MACHINES OR EQUIPMENT TO NORMAL OPERATION. After the servicing and/or maintenance is complete and equipment is ready for normal operation, check around the area to ensure that no one is exposed. Remove all tools from the machine, replace all guards and remove all lockout and tagout devices. Operate the energy isolating devices to restore the equipment to service.

c. PROCEDURE INVOLVING MORE THAN ONE PERSON. If more than one individual is required to lockout and tagout equipment, each person shall place his/her personal lock and tagout device on the energy isolating device(s). When an energy isolating device cannot accept multiple locks and tags, a multiple lockout device should be used.

## 6. RESPONSIBILITIES.

a. SUPERVISORS. Supervisors of employees servicing or performing maintenance on machines/equipment that require the isolation from the energy source shall:

(1) Ensure that these Lockout/Tagout procedures are strictly followed for all work being performed. Supervisors should incorporate the requirements of this procedure into the daily work assignments of all employees under their cognizance.

(2) Provide training to employees to ensure the purpose and function of the energy control program are understood.

(a) Each employee who implements a Lockout/Tagout procedure shall receive training on the following:

1. Recognition of applicable hazardous energy sources and the methods to dissipate or restrain.

2. Type and magnitude of the energy available in the workplace and the location of the energy controlling device.

3. The purpose and use of Lockout/Tagout (Energy Control) procedures.

4. The type(s) of equipment checked to ensure disconnections.

5. Name(s)/Job Titles(s) of employees authorized for Group Lockout.

(b) All other employees whose work operations are effected by the Lockout/Tagout procedure shall be instructed on the following:

1. Lockout/Tagout procedures effecting their operation.

2. Prohibition relating to attempts to restart or re-energize machines or equipment which are locked and tagged out.

(3) Conduct periodic inspections to ensure that compliance with Lockout/Tagout procedures are followed and to correct any deviations or inadequacies observed.

(4) Provide padlocks and tags to authorized employees. Each authorized employee, who routinely uses this procedure, should be issued one personal and one shop lock.

b. EMPLOYEES. Employees are responsible for compliance with these Lockout/Tagout procedures. Failure to follow all aspects of these procedures could result in disciplinary action up to, and including termination.

c. OSH OFFICE. The OSH Office is responsible for:

(1) Providing a Lockout/Tagout Energy Control Program

(2) Authorizing the type of lock to be used

(3) Authorizing the use of Tagout procedure

(4) Conducting an inspection at least yearly

(5) Changing the program as needed

7. CONTRACTOR MAINTAINED MACHINERY AND EQUIPMENT.

a. Lockout/tagout procedures are not required for machinery or equipment which will not be maintained, or serviced by Center employees; i.e., contract

maintenance. However, the following must be posted at the vicinity of the machinery or equipment.