LOCKOUT PROCEDURES - MACHINERY

ANY EMPLOYEE who has to repair, adjust, or maintain machinery or other equipment may be taking a big risk unless he is certain that the machine or equipment cannot be started up, energized, or activated until his job is finished.

The most practical and positive guarantee that men will not be injured while performing such work is the use of lockout devices and lockout procedures.

What are lockout devices and procedures?

*A **lockout device*** is a mechanism or arrangement that allows the use of key or combination locks (most commonly padlocks) to hold a switch lever or valve handle in the "off" position. Some switches and valves have lockout devices built in; others require modification before locks can be used.

A lockout procedure consists of the steps that must be taken by both management and the worker to assure that lockout devices are used, and used properly.
What circumstances dictate the employment of lockouts? The list of examples could be endless:
- Making repairs on electric circuits.
- Cleaning or oiling the movable parts of production machinery (particularly where dangerous nip points are involved).
- Clearing blocked or jammed mechanisms.
- Work on lines carrying hazardous substances or high pressure (sometimes safeguarded by locking out valves; sometimes by capping or "blanking off" lines), in short, any situation that requires maintenance men, repairmen, electricians, millwrights, pipe fitters, etc., to work on potentially hazardous equipment.

There is another application for the lockout principle: to prevent unauthorized use of hazardous equipment.
Examples:
- Taking the keys out of vehicle ignition locks.
- Locking off power to equipment, such as woodworking power tools, that might tempt after-hours use.
- Locking the doors to areas presenting hazards to unauthorized personnel.

Lockout devices
Lockout procedures cannot be followed unless lockout devices are provided for the main power controls to all potentially hazardous machinery.

In the case of electrically-powered machines. the "main power control" is the remote disconnect or breaker, not the push-button controls or switch on the machine itself. The disconnects are safer - there is less likelihood of a short of other electrical malfunction.

Since the concept of locking out is most frequently associated with electrical circuits, most disconnects and breakers are designed so that the switch lever can be padlocked in the "off" position. When an electric breaker or disconnect is opened, the circuit is dead.

The existence of locks, lockout devices and multiple-lock adapters does not make a lockout program. They are of no use if they are not properly employed on every appropriate occasion.

Following is a step-by-step lockout procedure:

1. Before any equipment is locked out, The supervisor/foreman must be advised that a specific piece of machinery has been taken out of operation. The supervisor/foreman may be required to oversee lockout procedures.

2. Turn off the point-of-operation controls. (Disconnect switches should never be pulled while under load, because of the possibility of arcing or even explosion.)

3. Turn the main power controls (switch, breaker, or valve) "off." (Where high voltages are involved this may be the responsibility of an electrician.)

4. After the switch has been opened or the valve closed, the person or persons who will be involved in the job will snap their locks on the control lever. At this point. locks should be tagged. Tags can describe the type of work the lock-user is engaged in. how long the job will take. and who the supervisor is.

5. Try the disconnect or valve to make sure it cannot be moved to "on."

6. Try the machine controls themselves as a test that the main controls are really "off."
   As each employee completes his repair or maintenance work, he removes his own lock and supplemental tag. The man who removes the last lock should notify the foreman that the work is finished and the equipment is ready to go again.

Lockout don'ts:

Lockout procedure can be "short circuited" in a number of ways. Supervisors and employees whose work requires locking out equipment should be aware of the dangerous mistakes so they can make extra effort to avoid them.

- Pulling fuses is not a substitute for locking out. A yanked fuse is no guarantee that the circuit is dead. Even if it were, there's nothing to stop someone from unthinkingly replacing the fuse.
- Locking out one source of power to equipment may not be enough. Many machines use a combination of power supplies. In such cases it is up to the supervisor to be aware of auxiliary power sources and have them locked out too.
- Employees should not be expected to guess what controls apply to what machines, or to trace piping or wiring to find the correct main controls. All disconnects and valves should be clearly marked. This is doubly important when controls are remote from the equipment or on master panels containing several controls.
- Don't assume that because equipment isn't functioning, it will stay that way.
- Do not yield to temptation to bypass lockout procedures. No job is too small to merit locking out. Bypassing lockout procedures can cost lives.

FOR FURTHER INFORMATION, SEE THE CURRENT OCCUPATIONAL AND HEALTH SAFETY REGULATIONS

REF #ML01

DEFECTIVE TOOLS
TAG-OUT

General

Defective tools can cause serious and painful injuries. If a tool is defective in some way, DON'T USE IT, TAG IT OUT.

Be aware of problems like:

1. Chisels and wedges with mushroomed heads.
2. Split or cracked handles.
3. Chipped or broken drill bits.
4. Wrenches with worn out jaws.
5. Tools, which are not complete, such as files without handles.

To ensure safe use of hand tools, remember:

1. Never use a defective tool.
2. Double check all tools prior to use.
3. Ensure defective tools are tagged out then repaired.

Air, gasoline or electric power tools, require skill and complete attention on the part of the user even when they are in good condition. Don't use power tools when they are defective in any way, tag them out and send for repair.

Watch for problems like:

1. Broken, or inoperative guards.
2. Insufficient or improper grounding due to damage on double insulated tools.
3. No ground wire (on plug) or cords of standard tools.
4. The on/off switch not in good working order.
5. Tool blade is cracked.
6. The wrong grinder wheel is being used, or
7. The guard has been wedges back on a power saw.

***For further information see the application current Occupational Health and Safety Regulations.**