Put a Lock on Stored Energy

Energy keeps the workplace going, but it can also kill. Unexpected release of energy is the cause of many serious injuries. Here is one example:

Three workers were fixing a problem in a waste conveyor. Two of them tightened the drive belt, while a third worker cleaned a jam at the end. This third worker was seen leaving the area. However, he returned, unnoticed by the first two workers.

Under the assumption that the conveyor was clear, it was restarted. The worker who had been clearing the jam was caught in the moving machinery. He suffered severe crushing injuries to his arm.

This injury occurred because a very important safety procedure was not used. No maintenance or repair work should be carried out until all control devices have been locked out at the power source. In this case, there was no lock on the conveyor controls. There was also an obvious lack of communication among the people working on the machine.

An understanding of energy sources, and the correct lockout and tagout procedures is important for all workers.

Lockout means blocking the flow of energy from any power source to the equipment. A lockout device such as a key and padlock is used to keep the power lever secured in an “off” position.

Tagout refers to putting a tag on the power source. It warns others not to switch the power on. It also identifies the person doing the work. A tagout alone is not as effective as a lockout – they should be used together.

Only the person who places the lock and tag is permitted to remove it.

The power which is being locked out is often electrical power. But machinery and equipment can also be run by other types of power

such as fuel gases, hydraulic (pressurized fluid), pneumatic (compressed air), steam, gravity and spring-loaded mechanisms.

In addition, lockout systems protect against unexpected release of materials. For example, lines carrying fluid, gases or solids can be blocked off and locked out before work begins.

There are a number of steps in a typical lockout procedure.

- The person doing the lockout tells other people in the area, including the operations personnel, that a lockout procedure is under way.
- The equipment is turned off and it is disconnected from all energy sources. All devices such as switches and valves are located and listed.
- Next, all of the energy sources are locked out with an actual lock. For instance, the lock may be attached to a lever which controls the machine.
- The equipment is also tagged. The tag tells others what is going on, and who is doing the work. It warns them not to turn on the equipment.
- Next, any residual energy that may need to be released is discharged. For example, air pressure may need to be released.
- Next, the equipment is tested by the local controls to make sure it is really off. Switches are turned on, then off again.
- After the work is done and the worker is out of danger, he removes his locks and tags, and notifies co-workers. Operations personnel must be notified that the work is complete.

Never forget that the locks and tags themselves do not de-energize the machinery. You must only attach them after the machinery has already been isolated from its energy sources.