Lockout and Energy Control – Compliance Game Plan

The 8 steps you must take to protect workers who service shutdown machinery.

Most machinery and equipment has to be shut down before it can be safely serviced, cleaned, repaired or adjusted. The problem is that machines may unexpectedly start up while workers are servicing them. The result is typically death or dismemberment. How do these gruesome things happen' According to the U.S. Bureau of Labor Statistics:

- 80%: The machine wasn't properly turned off to begin with;
- 10%: Another worker started the machine while the victim was working on it;
- 5%: The machine was started by potential energy that wasn't properly controlled; and
- 5%: Power was disconnected but the disconnection wasn't verified.

What the Law Requires

OHS laws require employers to implement procedures to ensure that machines being serviced are not only turned off but isolated from their energy source and that the system is drained of any stored or residual energy. Then, only after somebody verifies that the machine is totally inoperable and poses no risk of unexpected activation can the servicing work

begin. The name for this method is 'lockout' and it's an essential requirement of OHS regulations. Here's an 8-step game plan for complying with lockout requirements.

Step 1: Identify Operations Requiring Energy Control Procedures

The first step is to determine which, if any, of the machine servicing operations carried out at your site require procedures for controlling hazardous energy. Lockout or an equivalent energy control procedure is mandatory for any operations where machinery must be shut down to ensure safe servicing. But the OHS laws make exceptions for troubleshooting, minor routine servicing and other operations. These exceptions typically apply where:

- The manufacturer's specifications require the machinery to remain operative when it's serviced;
- The machine is unplugged and the worker performing the service operation has exclusive control over the plug; and
- Implementing lockout or an equivalent energy control procedure isn't reasonably practicable.

But even where hazardous energy control isn't required, employers still must implement, train workers in and keep readily available safe written procedures (not to mention use any necessary machine guards or mechanical devices) to ensure that the machine servicing work is carried out safely.

Step 2: Select Energy Control Method

If you determine that unexpected energization does pose a hazard, you must figure out the best way to guard against it. Although locking out is usually the preferred method, it may not be the only option. Many provinces give employers leeway to use alternative methods where:

- Lockout isn't reasonably practicable;
- The employer implements an alternate procedure or code of practice that specifically provides for the responsibilities of different personnel involved in the operation, safety training and instruction for workers performing the work and detailed procedures for the neutralization, clearance, release and start-up of the machine; and
- The employer can show the alternative method provides workers protection at least equivalent to lockout.

Step 3: Create Lockout Procedure

Once you select the energy control method, you must create a written procedure for applying it. The procedure must be specific to the machine being serviced'generic procedures are a no no, kept readily available to workers and list, at a minimum:

- A description of the equipment/machine the procedure covers;
- The specific steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy;
- The specific steps for the placement, removal and transfer of locks, energy-isolating devices and/or tags and who's responsible for performing them;
- The specific steps for testing a machine or equipment to determine and verify the effectiveness of energy control devices and measures;
- A detailed description of the lockout sequence, if lockout is used;
- A detailed description of how the machine is returned to service;
- Procedures providing for the orderly transfer of control of locked out energy isolating devices in the event of shift or personnel changes; and

- A statement requiring workers to comply with the procedure.

Step 4: Establish Lockout Sequence

When lockout is the energy control method, the procedure must list the lockout sequence that must be carried out before work on the machine can begin:

- **Shutdown:** The machine is shut down using the appropriate shutdown method in the energy control procedure in an orderly way that doesn't create additional hazards;
- **Isolation:** All energy isolation devices are physically located and operated so as to isolate the machine from the energy source;
- **Application of Lock(s):** The worker working on the machine attaches the lock or lockout device so as to hold the energy isolating device(s) in a 'safe' or 'off' position'if tagout is used, tags are also affixed to the energy isolating device;
- **Restraint of Stored Energy:** Once the lockout or tagout device is in place, all potentially hazardous stored or residual energy is drained out of the system; and
- **Verification of Isolation:** The final step before the work can begin is for the worker to verify that isolation and deenergization have been accomplished and the machine is totally inoperable.

Step 5: Establish Lock Removal Process

The lockout procedure must also provide for removing the locks and restoring the machine to service. **Rule:** The only person allowed to remove the lock is the worker that placed it. **Exception:** The manager or supervisor in charge of the work or another competent worker designated by the employer can remove the lock if the worker who placed it isn't available, as long as that person:

- Makes every reasonable effort to contact the worker who placed the lock;
- Ensures that the machinery can be safely reenergized before removing the lock.

In addition, somebody must notify the worker who placed the lock that it's been removed at the start of his/her next shift.

Step 6: Consider Use of Group Lockout Procedure

Having individual workers affix and remove personal locks may be inefficient or ineffective where there are multiple workers working on the machine or multiple machines that need to be locked out. That's why Alberta, BC, Newfoundland and New Brunswick allow and Yukon requires employers to use a group procedure for lockout-required work involving a large number of workers or machines. The way the group lockout procedure typically works:

- The employer provides a lockbox or other key securing system and gives each worker a personal lock that clearly identifies the worker to whom it belongs;
- The workers affix their personal locks;
- Two qualified or competent workers then independently lock out the energy isolating devices, secure the lockbox containing all the keys, fill out sign and post a checklist identifying the machinery the lockout covers; and
- The qualified/competent workers verify that all hazardous energy sources have been effectively isolated; and
- After the work is done, the qualified/competent workers give the all-clear for removing the locks and restoring the machine to operation after confirming that it's safe to do so.

Step 7: Provide the Right Lockout Equipment

Employer must provide the locks, chains, wedges, key blocks, adapter pins, self-locking fasteners and other hardware for isolating, securing or blocking machines or equipment from energy sources, as well as the tags. Combination locks aren’t allowed; nor can the lock prevent access to other energy-isolating devices supplying machinery.

Step 8: Coordinate Lockout Procedures with Contractors

If you rely on an outside contractor to perform work relying lockout at your site, you need to determine which lockout procedure to use. Don’t use the contractor’s procedure unless it’s specific to your machine; don’t use your own procedure without first verifying that the contractor’s workers understand and are capable of complying with it.