

Purpose

The purpose of this procedure is to establish clear guidelines for LOTO where strict safety procedures are required for the protection of employees and to avoid damage to equipment.

This includes the positive isolation of machinery, equipment, powered mobile equipment or other electrically energized systems during construction, start up, repair, maintenance and/or associated activities.

Scope

These guidelines will apply to all employees and contractors on the job site.

No employee or supervisor shall lockout any energized equipment until all requirements under this section have been read and understood.

***“Equipment”*** in this procedure refers to any machinery, process equipment, powered mobile equipment or other electrically energized systems.

Self-protection is the fundamental responsibility of the individual worker.

Only qualified electricians will be allowed to handle the main electrical switch for the purpose of lockout.

***Failure to adhere to these procedures will result in disciplinary action.***

Lockout Procedures

#### Preparation

1. Notify all affected workers that a lockout is required, the reason for the lockout and the expected duration of the lockout.
2. Take all necessary tools, equipment and PPE required to perform the task safely to the job site.

#### Machinery or Equipment Shutdown and Isolation

1. If the equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.).

Only workers knowledgeable in the operation of the specific machinery equipment should perform shutdown or re-start procedures.

1. Identify all energy sources (electrical, mechanical, hydraulic, etc.) feeding into the equipment.
2. Determine the steps, materials (energy-isolating devices), locations and methods necessary to control each energy source.
3. Operate the energy-isolating device(s) so that all energy sources (electrical, mechanical, hydraulic, etc.) are disconnected or isolated from the equipment.
4. **Caution:** Electrical disconnect switches should never be pulled while under load, because of the possibility of arcing or explosion.
5. Release, disconnect, or restrain all stored energy, such as that in capacitors, springs, elevated machine parts, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc., by safe methods such as grounding, repositioning, blocking or bleeding-down.
6. **Caution:** Pulling fuses is not a substitute for locking out. A pulled fuse is no guarantee the circuit is disconnected or isolated. Even if a circuit is disconnected or isolated, another work could inadvertently replace the fuse.
7. **Caution:** Equipment that operates intermittently, such as a pumps, blowers, fans or compressors, may seem harmless when they are not running.

Never assume that because equipment is not currently operating it will remain off for the duration of any work to be performed on it.

#### Application of Lockout/Tagout

1. Lockout and tagout the energy-isolating device with an assigned, individual lock. A worker will not be protected unless they use their own padlock.
2. If more than one worker is working on the same piece of equipment at the same time, each one shall lockout the equipment, by placing a personal lock and tag on the group lockout device when they start work, and should remove those devices when they stop working on the machine or equipment.
3. Locks and tags should clearly show the name of the person who applied the device, the date, and the reason for the lockout.

This identifies who is servicing the machinery or equipment. In a multiple lockout/tagout situation, it will also identify any worker(s) who may not have finished working.

1. Locks and tags must be durable enough to withstand the environment in which they are to be used. Information on the locks and tags must remain legible.
2. Locks must be substantial enough to prevent removal without the use of excessive force. Tags must be substantial enough to prevent accidental or inadvertent removal.
3. Both locks and tags are to be standardized by colour, shape, or size. Tags should be easily recognized and provide appropriate information about the lockout.
4. **Caution:** For some equipment it may be necessary to construct attachments to which locks can be applied. An example is a common hasp to cover an operating button. Tags must be attached to the energy isolating device(s) and to the normal operating control in such a manner as to prevent operation during the lockout.

#### Verification of Isolation

1. After ensuring that no workers are exposed to operating machinery or equipment, operate all normal controls to verify that all energy sources have been disconnected and the equipment will not operate.

***List all controls that need to be tested and all indicators that should be observed to ensure the equipment has been isolated for all energy sources.***

1. If there is a possibility of re-accumulation of stored energy, such as an increase in pressure to a hazardous level, isolation of the equipment must be periodically verified until the maintenance or repair is completed, or until the possibility of such accumulation no longer exists.
2. **Caution:** Ensure all controls are returned to the **OFF** or **NEUTRAL** position upon completion of the test.

A check of system activation (e.g. use of voltmeter for electrical circuits) should be performed to ensure isolation.

1. The equipment is now locked-out.

#### Lockout/Tagout Interruption

1. If a machine is locked-out/tagged-out and there is a need for testing or positioning (jogging/cycling) of the equipment/process, the following steps shall be followed:
	* List the location(s) of the lockout devices that can be safely removed.
	* Clear the equipment/process of tools and materials.
	* Ensure workers are a safe distance from any potential hazard.
	* Remove locks/tags according to established procedure.
	* ***Only the lockout devices absolutely necessary to allow the equipment to be jogged or cycled should be removed.***
	* Proceed with test, repositioning, jogging/cycling.
	* De-energize all systems and reapply all locks/tags to the controls prior to recommencing work.

#### Release from Lockout/Tagout and Restoring to Operational Service

1. Before locks and tags are removed and energy is restored to the machine or equipment, inspect the work area to ensure that tools, materials and non-essential items have been removed and that machine or equipment components (guards and safety devices) are reinstalled and operationally intact.
2. Check the work area and ensure all workers are a safe distance from the equipment and any potential hazard.
3. **Caution:** Ensure all controls are in the **OFF** or **NEUTRAL** position.
4. Each lock and tag should be removed from each energy-isolating device only by the worker who applied the lock(s) and tag(s).
5. Notify affected workers that the servicing or maintenance is complete and that all locks and tags have been removed.
6. Identify and follow any steps needed to safely re-energize the machinery, equipment or powered mobile equipment.