## LOCK-OUT/TAG-OUT

To ensure that all energy sources are: isolated and effectively controlled prior to any work being done on or in close proximity to machinery or equipment.

DEFINITIONS

**Authorized Employee** - An employee who is qualified and assigned to perform lockout procedures as a result of their level of knowledge, training, and experience. He or She has received Lockout Training, including comprehension of equipment-specific lockout procedures.

**Energy Source** - Any source of: electrical, mechanical, hydraulic, pneumatic, chemical, thermal, gravitational, stored or other energy.

**Lockout** - placement of a lock on an energy-isolating device in accordance with an established procedure, thereby indicating that the energy-isolating device is not to be operated until removal of the lock and lockout procedure has been completed.

**Lockout Device** - a mechanical means of locking out an energy source using an individually keyed lock to secure an energy-isolating device in a position that prevents movement of a machine, equipment, or process.

STANDARDS / PROCEDURES

Isolation of energy sources is a five-step process:

1. Lock
2. Tag
3. Clear
4. Try
5. Release

**LOCK**

The person responsible for the work will notify all affected personnel of the extent and duration of the shutdown of the machinery, equipment or process.

The person in charge of the work will ensure that all machinery, equipment or process is shut down, locked and tagged.

Each individual working on or near the equipment must place their assigned lock and tag at the lockout point(s). A lockout scissor clasp may be required.

**TAG**

A tag must be securely attached to each lock. The tag used must be made of non-conductive material with the words “DO NOT OPERATE” written on it, the name of the worker and the date of the lockout.

**CLEAR**

The person in charge of the work will clear the machinery, equipment or process of any hazards or people.

**TEST / TRY**

1. Once the person in charge of the work is assured that all sources of energy are locked-out and tagged and all is clear, they will try to activate the equipment:
2. Make certain everyone stands clear then try to operate the equipment controls (push buttons, switches, etc.) to ensure the machinery or equipment or process will not activate or move.
3. Ensure the machinery / equipment / process controls are returned to the off position immediately after the test.
4. Relieve or restrain any residual or stored energy.
5. Ground electrical energy stored in capacitors.
6. Test with appropriate test equipment and visually check to determine that all energy sources have been neutralized.

**RELEASE**

If it is assessed that everything is properly locked out, the person in charge will release the equipment for work to be done. Equipment removed from service because of safety concerns must be locked, tagged, cleared and tried by the person in charge of the work to ensure it cannot be used.

The individual worker’s lock and tag must remain on any system that was rendered inoperable until such time that:

1. They complete the repair of the system and it is safe to operate
2. They turn over responsibility for the system to another person, and the lock and tag of the individual accepting the responsibility is properly affixed to the equipment.

**LOCKS CAN ONLY BE REMOVED BY THE OWNER!**

If a worker fails to remove a lock and tag and leaves the work area, and can be reached, they may authorize the Supervisor to cut off the lock. If the worker cannot be reached, the Supervisor, after checking that the equipment can be operated safely, may authorize the removal of the lock and tag. A written record of such removal must be kept on file.

The worker is to be contacted regarding their lock being removed at the earliest opportunity to ensure that they do not return to work on the equipment and not realize that their lock has been removed and the equipment may be energized.

It is not permitted to remove another workers’ lock unless the preceding steps were followed.

**STORED ENERGY HAZARDS**

Can include electrical current, spring-loaded devices, suspended weight (gravity), compressed air or gases. Each type of energy source requires an appropriate means of isolation.

**COMPLETION OF MAINTENANCE / REPAIRS**

Upon completion of the maintenance / repairs, the person in charge of the work will make a final inspection to ensure that all repairs are completed; all guards etc. have been replaced.

All personnel are informed prior to the equipment being re-energized. The locks are removed in reverse sequence (the last person to put on the lock will be the first to remove it and the first person to put on the lock will be the last to remove it) and the equipment brought on-line by the person in charge of the work.

**EQUIPMENT REQUIRING SPECIFIC HANDLING**

Some equipment may require a specific “Isolation” procedure to ensure all sources of energy are de-energized. The Supervisor will ensure that the equipment, machinery and / or process is identified and an appropriate specific “Isolation” procedure is in place and followed

**MULTIPLE PERSON LOCK-OUT**

Each person working on the machinery, equipment or process is responsible for locking out the energy-isolating device. Multiple locks can be applied with scissor adapters.

The first worker who applies the lock (must be an authorized company employee) must make sure the lockout is effective and the equipment will not start. When each worker has finished maintenance, the worker removes only his or her own personal lock. The worker who removes the last lock (who is the worker who applied the first lock) should check that all workers are in the clear and that the equipment can be safely restarted.

**MULTIPLE POINT LOCK-OUTS**

To effectively lockout equipment with multiple energy sources, you must lockout all energy-isolating devices. An equipment, machinery or process specific lockout procedure will be required in order to identify all the lockout points.

**ISOLATION OF ELECTRICAL ENERGY SOURCES**

Electricity is the most common energy source that needs to be locked out. For plugged in type of equipment, a personal lock is not necessary if the person doing the work keeps the plug-in view and under control (Coiled) while working on the equipment. If the worker must leave the equipment, then a lock / tag is required. Before doing any work, the worker must ensure that all moving parts have stopped and are secured.

For hard-wired equipment, the equipment or machine will need to be shut-off making sure that all moving parts have come to a complete stop.

* **ISOLATION BY MEANS OF START / STOP BUTTON OR OTHER CONTROL SWITCH IS NOT ACCEPTABLE**
* **PAY PARTICULAR ATTENTION TO ENSURE ALL MULTIPLE ENERGY SOURCES ARE IDENTIFIED AND INCLUDED IN ISOLATIONS**

Isolation of lighting circuits in fused / breaker panels can be achieved by removing the fuse or flipping the breaker switch to the off position and locking and tagging the breaker switch or the lighting panel door closed.

It is preferred that an Electrician removes the fuse(s) to provide additional isolation of the system(s).

Following isolation, the systems are to be locked and tagged.

* **WHEN OPERATING A POWER DISCONNECT SWITCH, EMPLOYEES MUST, LOOK AWAY FROM THE BOX, STAND TO ONE SIDE OF THE SWITCH BOX, ON THE SIDE OF THE HANDLE, AND USING THEIR LEFT HAND, OPEN OR CLOSE THE SWITCH.**

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