



FP&M Safety Talk – LOCKOUT/TAGOUT

Date: _____

Trainer: _____

Failing to control potential energy sources before performing maintenance, repair, cleaning, clearing, etc. of equipment can lead to devastating consequences. According to the Bureau of Labor Statistics, failure to shut off power while servicing equipment is the primary cause of injuries. As a result, many workers are seriously injured or even killed due to not following a lockout/tagout program.

Lockout/Tagout (LOTO) programs are designed to ensure that all potential energy sources are disconnected from equipment prior to maintenance, repair, cleaning, clearing or any other action that places you or anyone else in a position where you could get hurt if the machine accidentally turned on or there was a sudden release of energy. The goal of Lockout/Tagout is to prevent you or your co-workers from being hurt by potential energy sources due to accidental startup or activation of equipment.

A “potential energy source” is any type of energy that is stored and can be accidentally released. Electrical energy is one that a lot of people identify with lockout/tagout programs, but other energy sources include:

- Hydraulic, vacuum, or pneumatic pressure from energized fluid systems.
- Mechanical energy which is like a coiled spring ready to release.
- Thermal energy including steam and heated, pressurized systems.
- Chemical energy released during chemical reactions; this may include pressure releases and/or the release of chemicals that can cause harm.
- Kinetic energy, which is like a big rock on top of a hill--it is not a problem until it starts to roll downhill.

A piece of equipment may have more than one type of energy associated with it. For example, it might have an electric motor (electrical), pressurized steam lines (pneumatic and thermal energy) and pistons (mechanical energy). It is important to identify all the sources of energy and control them by ensuring they are all de-energized and placed in a safe and secure position before beginning work on any equipment.

It is important that someone who is knowledgeable about the piece of equipment and the area in which it is used identify all the potential energy sources. The manufacturer may provide information that will provide useful information as well. To ensure that everyone does a complete lockout/tagout, it is important to have written instructions or diagrams that show exactly how to lockout/tagout each piece of equipment. These should be available to any authorized personnel locking out a piece of equipment.

Energy is typically controlled by utilizing a lock and key to make it impossible to accidentally restart the equipment. Everyone on the team should know where to find the instructions for locking out each piece of equipment, where locks and keys are located, and where the keys are to be placed once lockout is completed. Before a person begins working on a piece of equipment that is locked out, that person should go over the lockout personally to ensure that all the necessary steps were taken.

Only authorized and specially trained individuals may perform lockout/tagout. They must know how to lockout all the energy sources, how to ensure that these energy sources stay locked out during the time anyone will be in a position to be hurt and how to clear the equipment --make sure all work is finished and everyone (and all their equipment) are out--before starting it back up.

Basic Steps for Lockout/Tagout

1. Notify other authorized and affected personnel that the equipment is to be locked/tagged out.
2. Review written equipment specific lockout/tagout procedures to identify all potential energy sources and determine how each source can be safely locked out.
3. Get all the supplies (locks, hasps, keys, etc.) you will need to do your lockout/tagout.
4. Shutdown the equipment all energy sources.
5. Disconnect and isolate the all the potential energy sources. (e.g., block moveable parts, disconnect electricity, etc.).
6. Apply lockout devices to controls and energy isolating devices.
7. Release energy (e.g., drain or bleed lines, etc.).
8. Test – Test - Test. Before allowing anyone to start working on a piece of equipment (and with everyone and everything safely out of the way!) try to start the machine to make sure it is shut down and energy is contained.



