

The Basics of Lockout/Tagout

Lockout/tagout (LOTO) is necessary to prevent the release of hazardous energy during service and maintenance activities. Not utilizing LOTO during these activities may lead to injury due to unexpected machine or equipment energization or the startup and/or release of stored energy. [OSHA 29 CFR 1910.147](#) outlines measures for controlling different types of hazardous energy. [OSHA 29 CFR 1910.333](#) includes additional information on electrical safety procedures and practices. Use this one pager as an opportunity to review the basics of LOTO as you evaluate your practices and procedures.

APPLICABILITY

Look at your service and maintenance activities to see where hazardous energy needs to be controlled. Most of us think about electrical energy, but there are other potential hazardous energy sources to consider, such as: chemical/gas, pneumatic, water, steam, mechanical, hydraulic, and even gravity.

Know that LOTO **does not apply** to the following tasks:

- Service and maintenance of equipment performed during normal production operations (including when safety guards are in place)
- Minor tool changes and adjustments
- Work on cord and plug connected electrical equipment when the plug is under the control of the employee performing maintenance
- Hot tap operations where:
 - Continuity of service is essential
 - Shutdown of the system is impractical
 - Documented procedures are in place and followed
 - Employees are effectively protected with interim and/or alternate hazard controls

Basic energy control procedure steps:

1. Notify employees of LOTO to take place
2. Prepare for shutdown – know the type and magnitude of energy involved
3. Shutdown machine or equipment
4. Isolate machine or equipment
5. Apply LOTO device(s)
6. Relieve any stored energy
7. Verify isolation of all energy sources
8. Perform service or maintenance
9. Notify employees LOTO will end
10. Release machine or equipment from LOTO
11. Start-up machine or equipment

ENERGY CONTROL PROCEDURES

- Develop, document, and utilize energy control procedures for all equipment you perform LOTO on
- Ensure procedures clearly outline the scope, purpose, authorization, rules, and techniques to be used for the control of hazardous energy **AND** the means to enforce compliance
- Consider procedures needed for the testing and positioning of machines or equipment, group LOTO, and shift or personnel changes

There are eight (8) exceptions to developing energy control procedures:

[OSHA 29 CFR 1910.147\(c\)\(4\)\(i\)](#)



ENERGY CONTROL PRACTICES

- Use lockout devices for equipment that can be locked out
- Make sure new or overhauled equipment is capable of lockout
- Use tagout devices alone only if your program provides employee protection equivalent to lockout

PROTECTIVE MATERIALS AND HARDWARE

- Ensure LOTO devices are only used to control hazardous energy (not “Out of Service” or “Do Not Use”)
- See if LOTO devices are durable, standardized via color, shape, or size, and substantial enough to stay in place
- Check tags to ensure they identify the employee who applied the device(s)



Image courtesy of OSHA
https://www.osha.gov/dts/osta/lotot_raining/hottopics/ht-relche-1-4.html

PERIODIC INSPECTION

- Inspect established energy control procedures at least annually to ensure they are up-to-date and employees are not deviating from the procedure
- Ensure an authorized employee [other than those using the procedure] conducts the inspection
- Document the completion of the inspection, including the identity of the machine or equipment, the date of the inspection, employees exercising the procedure(s), and the inspecting employee
- Have the inspector(s) review responsibilities under the procedure with each exercising employee
- Review [OSHA CPL-02-00-147](https://www.osha-slc.gov/cpl/02-00-147) for clarification on periodic inspection requirements

TRAINING & COMMUNICATION

- Train each authorized employee on recognizing hazardous energy sources, identifying the magnitude of energy, limitations of tags, and safe methods for energy isolation and control
- Instruct each affected employee in the purpose and general use of energy control procedure(s)
- Inform all other employees [whose work operations are or may be in an area where energy control procedures may be utilized] about energy control procedures and never to restart or reenergize machines or equipment which are locked and/or tagged out
- Retrain all authorized and affected employees when changes are made to energy control procedures, machines or equipment, job assignments, or inadequacies are discovered in authorized employee knowledge and use of the procedures
- Document, at a minimum, the employee's name and date(s) of training

For additional information on the SMCX's services, please visit the SMCX-hosted website at: <https://www.smscx.org/>.



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