

	CONTROL OF HAZARDOUS ENERGY – LOCKOUT/TAGOUT	Doc No:	5101 - 5018
		Issue Date:	19 Jun 2023
		Revision Date:	N/A
		Revision:	0
<i>SAFETY OPERATING PROCEDURE (SOP)</i>		Page 1 of 9	
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1.0 PURPOSE

- 1.1 To establish a program and utilize procedures for affixing appropriate lockout devices or tagout devices to energy isolating devices, and to otherwise disable machines or equipment to prevent unexpected energization, start-up or release of stored energy in order to prevent injury to employees.

2.0 SCOPE

- 2.1 This procedure applies to servicing and maintenance of machines and equipment in which the unexpected energization or start-up of the machines or equipment, or release of stored energy could cause injury to employees.

3.0 APPLICATION

- 3.1 This procedure ***applies*** to the following:

- 3.1.1 Performing servicing or maintenance on machines or equipment.
- 3.1.2 Removing or bypassing a guard or safety device to perform an inspection or maintenance of machines or equipment.
- 3.1.3 An employee is required to place any part of his or her body into an area on a machine or piece of equipment where work is actually performed upon the material being processed (point of operation) or where an associated danger zone exists during a machine operating cycle.
- 3.1.4 The only exception to the application of this procedure is for minor tool changes or adjustments and other minor servicing activities

- 3.2 This procedure ***does not apply*** to the following:

- 3.2.1 Work on cord and plug connected electric equipment for which exposure to the hazards of unexpected energization or startup of the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the exclusive control of the employee performing the servicing or maintenance.
- 3.2.2 Hot tap operations involving transmission and distribution systems for substances such as: gas, steam, water, or petroleum products when they are performed on pressurized pipelines provided that it can be proven that:
 - 3.2.2.1 Continuity of service is essential.

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3.2.2.2 Shut down of the system is impractical, and documented procedures are followed and special equipment is used which will provide proven effective protection for employees and contractors.

4.0 DEFINITIONS

- **Affected Employee:** employee whose job requires them to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires them to work in an area in which such servicing or maintenance is being performed.
- **Authorized Employee:** person who locks or implements a tagout system procedure on machines or equipment to perform the servicing or maintenance on that machine or equipment.
- **Energy Isolating Device:** mechanical device that physically prevents the transmission or release of energy, including but not limited to the following:
 - A Manually operated electrical circuit breaker.
 - A disconnect switch.
 - A manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and, in addition, no pole can be operated independently.
 - A slide gate.
 - A slip blind.
 - A line valve.
 - A block.
 - Any similar device used to block or isolate energy. The term does not include a push button, selector switch, and other control circuit type devices.
- **Energy Source:** any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

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- **Hot Tap:** procedure used in the repair, maintenance, and service activities that involves welding on a piece of equipment (pipelines, vessels, or tanks) under pressure, in order to install connections or appurtenances.
- **Lockout:** placement of a lockout device on an energy-isolating device in accordance with an established procedure. This will ensure that the energy isolating device and the equipment being controlled cannot be operate until the lockout device is removed.
- **Lockout Device:** device that utilizes a positive means such as a lock to hold an energy-isolating device in the safe position and prevent the energizing of a machine or equipment.
- **Normal Production Operations:** utilization of a machine or equipment to perform its intended production function.
- **Servicing and/or Maintenance:** workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning, or unjamming of machines or equipment, and adjusting or tool changes, where the employee may be exposed to the unexpected energizing or start-up of the equipment or release of hazardous energy.
- **Setting Up:** any work performed to prepare a machine or equipment to perform its normal production operation.
- **Tagout:** placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.
- **Tagout Device:** prominent warning device, such as a tag and means of attachment, which can be securely fastened to an energy-isolating device in accordance with an established procedure. This is to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

5.0 LOCKS & TAGS

5.1 Two methods shall be used for LO/TO:

5.1.1 **Method 1:** A LO/TO kit will be centrally located within a given department or shop, so that all necessary employees have access.

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Employees may check out what's needed (locks, tags, hasps, etc.) and return them once the LO/TO activity is completed.

5.1.2 **Method 2:** Each employee responsible for LO/TO are assigned a kit exclusively for that employee, to be kept in their possession and used only by them.

5.2 Only trained and competent employees will have access to LO/TO equipment.

5.3 LO/TO devices shall be singularly identified, only devices(s) used for controlling energy and shall not be used for other purposes.

5.4 LO/TO devices and shall meet the following requirements:

5.4.1 Durable and capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.

5.4.2 Constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.

5.4.3 Tags shall not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored.

5.4.4 Standardized within the facility in at least one of the following criteria: Color; shape; or size; and additionally, in the case of tagout devices, print and format shall be standardized.

5.4.5 Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.

5.4.6 Tagout devices, including and their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. Tagout device attachment means shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-piece, all-environment-tolerant nylon cable tie.

5.4.7 Lockout devices and tagout devices shall indicate the identity of the employee applying the device(s).

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- 5.4.8 Tagout devices shall warn against hazardous conditions if the machine or equipment is energized and shall include a legend such as the following: *Do Not Start, Do Not Open, Do Not Close, Do Not Energize, Do Not Operate.*
- 5.5 A list of employees authorized to use the LO/TO devices shall be kept on file in a well-known location (i.e., supervisors office).
- 5.6 Tags
- 5.6.1 Tags are warning devices only. They do not provide physical restraint.
- 5.6.2 Only the authorized employee who installed the tag shall remove it.
- 5.6.3 Tags must be legible and easily understood by all employees. Damaged tags will be immediately taken out of service and replaced with new ones.
- 5.6.4 Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

6.0 LOCK/TAG REMOVAL

- 6.1 LO/TO devices will only be removed by the employee who applied them. The only exception is if the authorized employee who installed the device left the facility to go home and forgot to remove the lock. In such a case the following steps shall be taken:
- 6.1.1 Verify that the employee is not at the facility (i.e. grounds, building facility).
- 6.1.2 Call the employee at home and have him come in and remove his lock.
- 6.1.3 If the employee can't be reached, then a supervisor will authorize the removal of the lock.
- 6.1.4 Management shall ensure that the authorized employee has been informed of the above actions before they resume work at the facility.
- 6.1.5 Documentation shall be kept on file and in writing describing the actions mentioned above and who was involved.

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7.0 LO/TO STEPS

- 7.1 The machine to be locked out is designated and a survey is conducted to locate all isolating devices to be certain which switches valves, or other energy isolating devices apply.
- 7.2 Notify all affected employees that a lockout/tagout system is going to be utilized and the reasons for it.
- 7.3 The machinery shall be shut down by normal stopping procedures (depress stop button etc.).
- 7.4 Turn off the main power disconnect switch or circuit breaker.
- 7.5 Lockout and tagout the disconnect switch or other main power source.
- 7.6 Test that the machine power has been removed by pressing the machine/equipment power switch and ensuring it doesn't start up. If the machine doesn't start up, then place the switch back to the "off" position. In the event the machine starts up the main power source has not been properly identified and locked out and the process shall stop until it can be found and properly locked out.
- 7.7 Any other sources of energy (i.e. air, pneumatic, inertia, hydraulic, etc.) must be dissipated and locked/tagged out before any maintenance shall take place.
- 7.8 Other authorized employees who shall be working on the equipment must place their own lock and tag on the disconnect switch. In such cases, place a hasp on the power disconnect which allows for multiple locks to be installed.
- 7.9 Ensure the machine operating controls are in the "OFF" position before beginning maintenance.
- 7.10 After maintenance is complete, ensure all tools have been removed from the machine or equipment and all guards have been reinstalled.
- 7.11 Remove all lockout/tagout devices. If more than one employee has a lock and tag on the hasp, wait until all locks and tags are removed before continuing.
- 7.12 Ensure all employees, tools and equipment are clear.
- 7.13 Turn on the main power, if no issues arise turn on the machine to perform an operational check and ensure it's working properly before being returned to service and employees are allowed to use it again.

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8.0 TRAINING

- 8.1 Supervisors shall ensure any/all employees performing maintenance on equipment or machinery shall be trained and competent before being allowed to perform LO/TO.
- 8.2 Training will include but is not limited to:
 - 8.2.1 Recognition of applicable hazardous energy sources.
 - 8.2.2 The type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.
 - 8.2.3 Purpose and use of the LO/TO procedures.
 - 8.2.4 Instruction regarding the procedure and disciplinary action relating to attempts to restart or re-energize machines or equipment which are locked and tagged out by other employees.
 - 8.2.5 Limitations of tags in the LO/TO procedures.
- 8.3 Retraining will be conducted with all employees in the following cases.
 - 8.3.1 Whenever changes are made in job assignments, machines, equipment, or processes that present a new hazard.
 - 8.3.2 Changes in the lockout/tagout procedures.
 - 8.3.3 Changes or modifications to the machinery or equipment.
 - 8.3.4 Whenever a periodic inspection is made of these procedures, or whenever a County representative believes that there are deviations from or inadequacies in the employee's knowledge or use of the LO/TO procedures.

9.0 DISCIPLINARY ACTION

- 9.1 The following actions may result in disciplinary action to include verbal reprimand, written reprimand, suspension, and/or termination:
 - 9.1.1 Failure to lock and tag a machine or a piece of equipment prior to working on it.
 - 9.1.2 Use of a personal or unauthorized lock for LO/TO.

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9.1.3 Failure to follow LO/TO procedures listed in this procedure.

9.1.4 Removing or installing another employee's lock/tag.

10.0 RECORD KEEPING

10.1 Training records shall be maintained at the department in which the employee is working and a copy of the training certificate will be sent to Human Resources for their permanent file.

11.0 ABBREVIATIONS

ABBREVIATION	DESCRIPTION
LOTO	Lockout / Tagout

12.0 DOCUMENT HISTORY

DATE	TYPE	DESCRIPTION OF CHANGE
19 Jun 2023	Initial	New Document
	Revision 1	

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