

3.5.1.2 Lock Out-Tag Out



YOUR ORGANIZATION
STANDARD OPERATING PROCEDURES/GUIDELINES

TITLE: Lock Out-Tag Out

SECTION/TOPIC: Technical Rescue Risk Management

NUMBER: 3.5.1.2

ISSUE DATE:

REVISED DATE:

PREPARED BY:

APPROVED BY:

X

Preparer

X

Approver

These SOPs/SOGs are based on FEMA guidelines FA-197

1.0 POLICY REFERENCE

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|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CFR | This procedure meets or exceeds the requirements specified by the Occupational Safety and Health Administration (OSHA) 29 CFR 1910.147, Control of Hazardous Energy (LOTO); 29 CFR 1910.333, Lockout/Tagout Electrical Safe Work Practices; and 1926.417, Lockout and Tagging of Circuits, as they relate to the control of hazardous energy sources. |
| NFPA | |
| NIMS | |

2.0 PURPOSE

This standard operating procedure/guideline addresses procedures ensuring that all electrical and mechanical equipment at or near the rescue site is turned off and physically prevented from being inadvertently turned on.

This Standard Operating Procedure (SOP) is designed to ensure that Fire Division personnel comply with the "Lockout/Tagout" program. The purpose of this SOP is to ensure that before any employee or contractor performs any servicing or maintenance on machinery or equipment, where the unexpected energizing, start up or release of any type of energy could occur and cause injury, the machinery or equipment will be rendered safe to work on by being locked and tagged out.

3.0 SCOPE

This SOP/SOG pertains to all personnel in this organization.

All Fire Division personnel are responsible for understanding and using lockout/tagout procedure as required by this SOP. This SOP applies to all Fire Division personnel and any contractor who may perform service and/or maintenance on machines and equipment capable of "unexpected" start up or release of stored energy. Effective hazardous energy control procedures will protect all workers potentially exposed to unexpected energization or release of stored energy which could cause injury to employees during the servicing or maintenance of machines, equipment or systems, as well as while working on or near exposed de-energized electrical conductors and parts of electrical equipment.

This program does not apply to the work on cord and plug connected electrical equipment for which exposure to the hazards of unexpected start up of the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the exclusive control (within arm's reach and line of sight) of the employee performing the servicing or maintenance.

4.0 DEFINITIONS

These definitions are pertinent to this SOP/SOG.

Authorized Employee is a City employee who locks out or tags out machines or equipment in order to service or maintain them. All authorized employees must successfully complete the required training.

Affected Employee is a City employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under Lockout/Tagout or whose job requires him or her to work in an area in which such servicing or maintenance is being performed. An affected worker cannot perform work under a Lockout/Tagout permit.

Authorized Locks and Tags - These are locks and tags that are used to ensure the safety of the Authorized Employees performing servicing and maintenance of machines equipment or systems. Servicing or maintenance may not begin until these devices are applied to the Energy Isolation Device(s). These locks and tags will not be used for any other purpose. The locks will be singularly keyed and the Authorized employees will retain the keys to individual locks. The type of keyed lock will be red in color. The print and format of tags will be standardized and will warn against hazardous conditions if the machine or equipment is energized. The tag will read "Danger – Do Not Operate" and will have black lettering with a white background. The tag will have an unlocking strength of at least 50 pounds. Locks and tags will identify the Authorized Employee applying the devices. Only an Authorized Employee may perform service or maintenance work on the system, equipment or

machine.

Contractor is any individual or firm working at a Fire Division facility that is not a City employee.

Energy Isolation Device is a device that prevents the transmission or release of hazardous energy or hazardous materials. Examples include, but are not limited to; restraint blocks, electrical circuit breakers, disconnect switches, slide gates, slip blinds, or line valves. For lockout/tagout purposes, isolating devices that provide visible indication of the device's position are desirable.

Lockout Device is a device that utilizes a positive means such as a lock, either keyed or combination type, to hold an energy isolating device in a safe position to prevent the energization of a machine, equipment or system. Other lockout devices include dead ends (blanks), bolted slip blinds, valve hand wheel covers, and chains/lock. All locks require a Danger Tag.

Lockout/Tagout (LOTO) is the installation of lock(s) and tag(s) on the Energy Isolation Devices to ensure that work can be performed safely. The lock(s) and tag(s) ensure that the Energy Isolating Device(s) and the machine, equipment or system(s) they isolate and/or control, cannot be operated until the lock(s) and tag(s) are removed.

Lockout is the placement of a locking device on an energy-isolating device that ensures the equipment being controlled cannot be operated until the lockout device is removed.

"Lockout device" is a device that utilizes a positive means such as a lock, either key or combination type, to hold an energy-isolating device in the safe position.

Other Employees are those whose work operations are or may be in an area where energy control procedures are utilized.

Safe Condition Check (Verification of De-energization) is the inspection or test of a system or component performed by the Authorized employee to ensure that the hazardous energy or materials are controlled to prevent injury or accident. **Note: This is an essential element of all energy control programs and procedures, which ensures the safety of all potentially exposed personnel.**

Supervisor is any Fire Division officer and the Fire Marshal who is responsible for overseeing lockout/tagout activities.

Tag is a "Danger – Do Not Operate" tag, which can be securely fastened to an energy isolating device with an unlocking strength of 50 pounds, to indicate that the Energy Isolating Device and the equipment being controlled cannot be operated until the Tag is removed. Tags are essentially warning devices affixed to energy isolating devices and do not provide the physical restraint of a lock.

Tagout is the placement of an attachable tag on an energy-isolating device to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout Device is a prominent warning device, such as a tag and a means of attachment, which can be securely fastened to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

5.0 PROCEDURES/GUIDELINES & INFORMATION

5.1 Procedures ensuring that all Electrical and Mechanical Equipment at or near the Rescue Site is

LOCKOUT/TAGOUT (LOTO) PRINCIPLES

This procedure establishes the requirements for the lockout/tagout of energy isolating devices.

1. It is mandatory that all personnel comply with the restrictions and limitations of this lockout/tagout program and related procedures.
2. No individual will attempt to start, energize, use, or operate a piece of equipment that has been locked out and tagged out after the safe condition check has been completed.
3. No individual other than the Authorized Employee who placed the device and tag will attempt to remove it, except as noted in section 7.
4. All locks and keys to be used will be stored in the appropriate areas with the exception of each Authorized Employees personal lock, which will be controlled by him/her.
5. The personal lockout and “Danger- Do Not Operate” tag signifies that there is an Authorized Employee working on a component and it was installed by that task’s Authorized Employee prior to starting work and will be removed by that Authorized Employee when their work is completed.
6. The Authorized Employee “Danger – Do Not Operate” tag is reserved for the exclusive use of the authorized worker identified on that tag. The identifying markings will be made in permanent form.
7. No one will authorize another person to ignore or violate this program and its procedures.
8. No person will remove a Lockout Device when an unsafe condition exists until they have corrected the condition or another person has installed a Lockout Device.
9. No Authorized Employee will install a lockout/tagout on any system without notifying the onsite supervisor. This is to ensure that affected personnel know the status of its equipment/systems.

10. A check valve cannot be used as an Energy Isolation Device.
11. Whenever an outside firm is contracted to perform work, the on-duty Fire Division supervisor will inform the management of the outside contractor of the contents and requirements of this program. This is to ensure the safety of all employees and contractors.
12. When electrical system grounds need to be applied they will be the last devices applied and the first devices removed in application of LOTO. Qualified electrical personnel will only apply grounding devices.
13. All personnel will receive the appropriate level of training based upon their LOTO duties (i.e., Authorized, Affected, or Other).
14. Any employee who observes any apparent violation of this program or related procedures will immediately notify their supervisor.

RESPONSIBILITIES

The Fire Division Training Officer and the Office of Fire Prevention (OFP) are responsible for developing and maintaining the Lockout /Tagout Program (LOTO). The Training Officer provides all necessary core training. OFP will periodically inspect LOTO projects and conduct an annual program review.

All Headquarters Captains will ensure employees are trained in coordination with the Training Officer. Each shift officer will conduct an annual review of their programs.

Supervisors must ensure that all LOTO requirements are followed.

Contractors performing work at a Fire Division facility must follow, at a minimum, the Fire Division program and procedures.

PROCEDURES

Lockout/Tagout Procedure

1. The Authorized Employee will determine all potential sources of hazardous energy (Computer generated and any other resources to properly identify all energy sources).
2. The Authorized Employee will obtain a lock box from the appropriate supervisor. Some Lockout's might require the use of other lockout devices (valve covers, chains, breaker covers, etc.). Tags will have the name of the Authorized Employee performing the work.

3. The Authorized Employee will go to each energy isolation device in the proper order listed on lockout/tagout procedure and de-energize that device using the locks from the lockbox. After removing each key from the lock, the Authorized Employee will keep the keys and place them into the lockbox that will prevent them from being lost or misplaced. Keys to all locks will be kept inside the lockbox. The Authorized Employee will then place his/her lock and tag on the lockbox and lock it with his/her personal key. The Authorized Employee's personal key will be kept with him/her. Also, a designated Supervisor may put his/her lock on the lockbox. This would only be completed in order to secure the lockbox if an employee left the jobsite and another employee took control of the job. The new employee would then be required to put his/her lock on the lockbox and proceed to follow all of the required LOTO procedures as stated in Section III.
4. When all energy isolation devices have been properly de-energized and locked/tagged out, the Authorized Employee will perform the necessary safe condition check(s) to ensure that all energy has been dissipated and controlled (Example: pushing local start buttons, throwing switches, etc.). The work can now begin.
5. When all work on the system is complete, the Authorized Employee will make sure that all machines, equipment, systems, and areas are clear from personnel and equipment before energizing.
6. The Authorized Employees will remove their personal locks from the lockbox and then remove all locks and tags from all energy isolation devices. Upon completion, the Authorized Employees locks will be placed back into the lockbox. The system or equipment will be energized in the proper order noted on the LOTO procedure. The system will then be put back into service as necessary.

Exceptions to Written Lockout/Tagout Procedures

There are occasions where specific lockout/tagout procedures are not required. They are not required when all of the following elements exist:

1. The machine or equipment has no potential for stored or residual energy or reaccumulation of stored energy after shut down which could endanger employees.
2. The machine or equipment has a single energy source which can be readily identified and isolated.
3. The isolation and locking out of that energy source will completely de-energize and deactivate the machine or equipment.
4. The machine or equipment is isolated from that energy source and locked out during servicing

or maintenance.

5. A single lockout device will achieve a locked-out condition.
6. The lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance.
7. The servicing or maintenance does not create hazards for other employees.

Energy Isolation Devices Not Capable of Accepting a Lock

1. If an energy isolation device is physically incapable of accepting a lock, a tagout system will be used which will offer full employee protection similar to that of a lockout system.
2. The tagout system includes all of the steps of this lockout program except the actual use of a lockout device on that particular energy isolation device. Additional means to be considered as a part of the demonstration of full employee protection will include the implementation of additional safety measures such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent energization.

Adding Energy Isolation Devices

Energy Isolation Devices may be added to the existing LOTO. The Authorized Employee responsible for the LOTO will review the scope of the additional work task and determine if it can be addressed under the existing LOTO. If the work can be performed under this LOTO, the Authorized Employee responsible for the LOTO will perform the steps per Section 6.1 of this procedure. If this task cannot be addressed by the existing LOTO, a new LOTO will be developed.

Removal of Authorized Employee Locks and Tags When Off-site

There may be times when the LOTO needs to be closed out to put equipment back into service when an Authorized Employee still on the LOTO is off-site and cannot be located. Removal of an Authorized Employee lock and tag without the Authorized Employee's signature will require a review by the Authorized Employee's direct Supervisor.

1. The Authorized Employee's Supervisor will attempt to reach the Authorized Employee to determine if the LOTO may be closed. If the Authorized Employee indicates that the LOTO may be closed, the Authorized Employee must return to the site to follow the normal LOTO removal procedure.
2. If the Authorized Employee cannot be contacted or cannot return to the facility, the Authorized

Employee's Supervisor may authorize removal of the Authorized Employee from the LOTO.

3. If the Supervisor authorizes the removal of the Authorized Employee's lock(s) and tag(s) all potentially affected employees will be notified.
4. The Authorized Employee will be contacted by his/her Supervisor immediately upon their return to work, to notify them that they have been removed from the LOTO.

RECORD KEEPING

The Fire Division Training Officer will maintain training records, including each employee's name and dates of training. OFP will also retain records of the annual Lockout / Tagout program audit.