

Safety
INSTALLATION HAZARDOUS ENERGY CONTROL PROGRAM (LOCKOUT/TAGOUT)

SUMMARY. This regulation establishes minimum requirements for implementation of the Installation Hazardous Energy Control Program.

APPLICABILITY. This regulation applies to each major subordinate command (MSC), directorate, and tenant unit assigned to Fort Hood that does servicing and maintenance of machines and equipment in which unexpected energization or start up of the machine or equipment or the release of stored energy could cause injury to personnel.

INTERIM CHANGES. Interim changes to this regulation are not official unless they are authenticated by the Directorate of Information Management (DOIM). Users will destroy interim changes on their expiration dates unless sooner superseded or rescinded.

SUPPLEMENTATION. Supplementation of this regulation is prohibited without prior approval of the Assistant Chief of Staff (ACofS), G1, III Corps Safety Office.

SUGGESTED IMPROVEMENTS. The proponent of this supplement is the ACofS, G1, III Corps Safety Office. Users are invited to send comments and suggested improvements to the Commander, III Corps and Fort Hood, ATTN: AFZF-GA-SAFE-G, Fort Hood, Texas 76544-5056.

OVERVIEW

	<u>1</u>
Purpose	The purpose of this regulation is to establish <ul style="list-style-type: none">● an energy control program consisting of personnel training and procedures for applying lockout or tagout devices to energy isolating devices.● guidelines to disable machines or equipment to prevent unexpected energization, start-up, or release of stored energy to prevent injury to personnel. <p style="text-align: right;"><u>1a</u></p>
References	Title 29 Code of Federal Regulations (CFR) 1910.147, General Industry, Occupational Safety and Health Administration (OSHA), Control of Hazardous Energy (Lockout/Tagout). National Fire Protection Association 70E Electrical Safety Requirements for Employee Workplaces. <p style="text-align: right;"><u>1b</u></p>
Abbreviations and Terms	Abbreviations and terms used in this regulation are explained in the glossary <p style="text-align: right;"><u>1c</u></p>

RESPONSIBILITIES

2

III Corps
Safety Office

The Safety Office

- provides lockout/tagout train the trainer classes for supervisors and work leaders.
- assists in the development of personnel training programs.
- conducts inspections of the energy control program.
- verifies program compliance during the annual safety and occupational health inspection.

2a

Commanders
and Directors

Commanders and activity directors will

- establish an energy control program consisting of a personnel training program and energy control procedures to prevent injuries to personnel during servicing and maintenance of machines and equipment (a sample standing operating procedure (SOP) outline is provided at appendix A).
- ensure all personnel required to work on or around hazardous energy source equipment have been trained in lockout/tagout procedures as outlined in this regulation and enforce compliance.
- provide the necessary equipment to accomplish the safe lockout/tagout of energy sources as outlined in 29 CFR 1910.147.
- appoint on orders a lockout tagout program coordinator to
 - coordinate and document personnel training,
 - maintain a list of machines and equipment, and
 - monitor program compliance.

2b

OPERATIONAL PROCEDURES

3

Application

Each MSC, directorate, or tenant unit that performs servicing and maintenance of machines and equipment in which **unexpected** energization, start up of the machines or equipment, or release of stored energy could cause injury to personnel will implement hazardous energy control procedures.

This program only applies to fixed base equipment that is wired directly into an electrical disconnect switch.

This program does not apply to tactical, construction, or cord and plug connected equipment where unexpected energization or start up of the equipment is controlled by unplugging the equipment from the energy source and by the plug being under the exclusive control of the person performing the servicing or maintenance.

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Application
(cont)

Exceptions to this program are where circuits or equipment are deenergized for minor

- maintenance,
- servicing,
- adjusting,
- cleaning,
- inspections, and
- operating corrections or the like.

Work shall be permitted provided

- the disconnecting device is adjacent to the circuit parts and equipment on which the work is being performed,
- the disconnect device is clearly visible to the employee(s), and
- the work does not extend beyond the work shift.

3a

PERSONNEL TRAINING PROGRAM

4

Energy
Control
Program

Personnel will be trained in the

- scope,
- purpose,
- function, and
- requirements of the energy control program.

The training program will be designed to provide personnel with the knowledge and skills required for the safe

- application,
- usage, and
- removal of hazardous energy controls.

Authorized
Personnel

Personnel authorized to institute lockout procedures must be trained to

- recognize hazardous energy sources in the work place,
- know the type and magnitude of the energy, and
- determine the methods and/or means by which to control hazardous energies.

4a

Affected
Personnel

Affected personnel will be instructed in the purpose and use of the energy control procedures.

4b

Other
Personnel

All other personnel whose work or duties are in the area where energy control procedures may be used will

- receive instructions on the procedure.

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Other Personnel (cont)

- be warned against attempts to restart or reenergize machines or equipment which are locked or tagged out.

4c

Personnel Retraining

Personnel will be retrained if change in

- job assignment,
- machines,
- equipment,
- processes, or
- energy control procedures.

Personnel will be retrained if an inspection reveals deviation from established procedures.

4d

Record Keeping

A record of all lockout/tagout training will be maintained at the organization or directorate level.

4e

SERVICING AND MAINTENANCE

5

Energy Control Procedures

Energy Control Procedures will

- be written and used during the servicing and control maintenance of machines and equipment when injuries could be caused by
 - unexpected energizing of electrical circuits.
 - start-up of equipment or machines.
 - release of stored energy.
- establish the requirement for protecting personnel in on, or around machines and equipment during repair or maintenance operations from injury due to unexpected
 - energization,
 - start-up, or
 - release of stored energy from the equipment or process.

5a

Authorized Personnel

Authorized personnel will

- locate and identify all isolating devices to be locked or tagged out.

NOTE: More than one energy source may be involved in the lockout/tagout process.

- if other personnel are affected, notify the supervisor and affected employees/personnel that a lockout/tagout is going to be utilized and the reason therefore.

Notification, if applicable, shall be given before controls are applied and after they are removed from the machine or equipment.

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 Authorized
 Personnel
 (cont)

- shut down equipment by the normal stopping procedures (depress stop button, open toggle switch, etc).
- operate the switch valve and other energy isolating devices so the energy source(s) (electrical, mechanical, hydraulic, etc.) is disconnected or isolated from the equipment.
- dissipate stored energy in
 - capacitors,
 - springs,
 - elevated machine members,
 - rotating flywheels,
 - hydraulic systems, or
 - pressure systems (such as air, gas, steam, or water pressure).

5b

 Lockout
 and
 Tagout

Lockout and tagout devices

- will be standardized by color, shape, or size within each
 - organization,
 - directorate, or
 - facility.
- must be applied to each energy isolating device.
- will not be removed without permission of the authorized personnel whose name appears on the lock or tag.
- are never to be
 - ignored,
 - bypassed, or
 - otherwise defeated.

If capable of being locked out, a lock must be placed on each disconnecting device used to control circuits or equipment.

A multilock hasp must be used if more than one person is performing work on the machine or equipment.

Tagout devices shall

- be affixed to the disconnect or isolating device.
- warn against movement of the isolating device.
- be placed in a conspicuous manner.

5c

Equipment Shutdown

In preparation for equipment or system shutdown, authorized personnel must know

- types and magnitude of energies.
- the associated hazards.
- methods of controlling the energy.

5d

Verify Lockout

Verification of lockout/tagout and deenergization of machines or equipment will be conducted by authorized personnel only.

After locks, tags, or both have been applied, the controls will be operated to verify that the machine or equipment is at zero energy state.

Lockout/deenergization will be verified with a voltage tester when direct contact with potentially live electrical components is likely.

Test equipment used to test circuits operating at more than 600 volts, nominal, will be checked for proper operation immediately before and after the test.

5e

Restarting Equipment

Authorized personnel

- make necessary test, adjustments, and a visual inspection of the work area and remove
 - tools,
 - restraints, and
 - electrical jumpers and warn personnel.
- who instituted the lockout/tagout procedures are the only persons authorized to remove the devices.

NOTE: Under unusual circumstances the supervisor may authorize the removal of lockout/tagout devices.

When the authorized person is not present, the supervisor

- may authorize the removal of a lockout/tagout device.
- will verify that the authorized personnel who applied the device is not at the facility.
- will make a reasonable effort to contact the personnel and ensure the authorized personnel placing the lockout or tagout device have knowledge of the removal prior to resuming work.

5f

Outside Personnel

When personnel from outside the facility (contractors or maintenance personnel) are to be engaged in activities covered by this regulation and 29 CFR 1910.147, the onsite employer (supervisor) and the outside employer will inform each other of their specific lockout or tagout procedures.

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Outside
Personnel
(cont)

The supervisor will ensure that personnel understand and comply with the restrictions and requirements of the outside employer's energy control procedures.

5g

Group
Lockout/
Tagout

When servicing or maintenance of machines and equipment is performed by a crew, section, department or other group, a group lockout/tagout procedure will be established which provides the same level of protection equivalent of the personal lockout system.

Each authorized person will apply a lockout/tagout device to the group lockout device lockbox, or multilock hasp when the group begins work and remove the device when work stops on the equipment.

When the group lockout/tagout system is implemented, the primary responsibility is vested in an authorized employee for a number or group of personnel working under the protection of a group lockout or tagout system or device.

If more than one crew section or group is performing service or maintenance in the area, an authorized person will be appointed to

- coordinate the affected work forces and
- ensure continuity of protection.

5h

Shift or
Personnel
Changes

Specific procedures will be developed and utilized during shift or personnel changes to ensure continuity of lockout/tagout protection.

The orderly transfer of lockout/tagout devices between authorized personnel will minimize personnel exposure to hazards from unexpected start-up or accidental release of stored energy.

Authorized personnel of the outgoing and oncoming shift will

- remove,
- transfer, and
- replace lockout/tagout devices.

5i

e. After ensuring that no personnel are exposed and energy sources are disconnected, attempt to operate the equipment controls to make certain the equipment is completely deenergized.

Caution: Return operating control (s) to "neutral" or "off" position after the test.

5. Restoring machines or equipment to normal production operations.

a. After the servicing and/or maintenance is complete and equipment is ready for normal production operations, check the area around the machines or equipment to ensure that no one is exposed.

b. After all tools have been removed from the machine or equipment, guards have been reinstalled and employees are in the clear, remove all lockout or tagout devices. Operate the energy isolating devices to restore energy to the machine or equipment.

6. Procedure involving more than one person.

In the preceding steps, if more than one individual is required to perform work on equipment, each person shall place their own lockout or tagout device on the energy isolating device(s). When an energy isolating device cannot accept multiple locks or tags, a multilock hasp will be used. If lockout is used, a single lock may be used to lockout the machine or equipment with the key being placed in a lockout box or cabinet which allows the use of multiple locks to secure it. Each employee will then use their own lock to secure the box or cabinet. As each person no longer needs to maintain their lockout protection, that person will remove their lock from the box or cabinet.

7. Basic rules for using lockout or tagout system procedure.

All equipment shall be locked out or tagged out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Do not attempt to operate any switch, valve, or other energy isolating device where it is locked or tagged out. When the machine or equipment is capable of being locked out, a lockout device will be used to prevent operation.

SIGNATURE
Commander/Director

Glossary

ABBREVIATIONS

ACofS	Assistant Chief of Staff
CFR	Code of Federal Regulations
DOIM	Directorate of Information Management
MSC	major subordinate command
OSHA	Occupational Safety and Health Administration
SOP	standing operating procedures

TERMS

affected personnel	Personnel with jobs requiring the operation or use of a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or personnel working in an area in which such servicing or maintenance is being performed.
authorized personnel	Personnel who lock or implement a tagout system procedure on machines or equipment to perform the servicing or maintenance on that machine or equipment.
capable of being locked out	Equipment capable of being locked out without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.
energized	Connected to an energy source or containing residual or stored energy.
energy isolating device	A device such as a switch, circuit breaker, lever, or valve that can be activated or deactivated to remove energy from a circuit or equipment.
energy source	All forms of energy to include electrical, mechanical, hydraulic, pneumatic, chemical, thermal, and gravity.
lockout	A means ensuring the energy isolating device and the equipment cannot be operated during maintenance.
lockout device	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 and prevent the energizing of a machine or equipment.
residual energy	Energy that is trapped after the source has been turned off and may be of sufficient quantity to momentarily activate the equipment or cause a rapid release of a substance under pressure. Examples are spring tension; dead weight; or hydraulic, pneumatic, or steam pressure.
tagout	An indicator stating the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.
tagout device	A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device to indicate the energy isolating and the equipment being controlled may not be operated until the tagout device is removed.

The proponent of this regulation is the ACofS, G1, III Corps Safety Office.

FOR THE COMMANDER:



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