

NFPA 70E

LOCKOUT/TAGOUT GUIDE



FORWARD

This Guide was developed by NECA to assist the industry in understanding and applying Lockout/Tagout (LOTO). The content is based on the NFPA 70E requirements in Article 120 Establishing an Electrically Safe Work Condition. However, reference to the Occupational Safety and Health Administration (OSHA) regulations associated with LOTO will also be included.

This reference is not designed as a replacement for the NFPA 70E standard nor the OSHA regulations. Its purpose is to serve as a quick reference for contractors working in the field. We encourage all members to obtain a copy of NFPA 70E and to consult the applicable OSHA regulations.

We would like to thank all individuals and organizations whose contributions facilitated the development of this Guide. It is our sincere desire that the use of this Guide will assist our industry in creating a safer and more productive workplace.

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OVERVIEW

A universal safety concept is to control hazardous energy. This applies to all forms of energy including, mechanical, pneumatic, hydraulic and electric. This document will focus on controlling electrical energy. The general rule in NFPA 70E is to create an electrically safe work condition (ESWC). All sources of supply must be identified, de-energized, and the energy source locked out and/or tagged out (LOTO) and conditions verified before work can be performed.¹ Consensus standards and government regulations direct the methods by which energy control or LOTO are performed.

(National Fire Protection Association) NFPA70E

The NFPA 70E Standard for Electrical Safety in the Workplace is the industry consensus standard most commonly referred to for electrical safety-related work practices. It has been in existence since 1979 and it applies to all installations covered by the *National Electrical Code (NEC)*®. The Committee which developed this standard consists of competent individuals representing all interests.

The NFPA 70E requirements for controlling hazardous energy can be found in Article 120 *Establishing an Electrically Safe Work Condition* which is divided into five separate sections (120.1, through 120.5) to prescriptively address the implementation of an ESWC as follows:

¹ OSHA 1910.333 (a)(1) prohibits work on live parts "... unless the employer can demonstrate that deenergizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations." Also see 1926.416(a)(1). Consult the NECA PPE Selector Guide for required precautions when working energized.



1) Lockout/Tagout Program

NFPA 70E requires that all employers establish, document, and implement a lockout/tagout program. The lockout/tagout program must specify lockout/tagout procedures to safeguard workers from exposure to electrical hazards. That is the stated purpose of NFPA 70E as seen in section 90.1. There are many types of workplaces and many types of employers with different equipment, tasks and potential exposures. The lockout/ tagout program and procedures must also:

- (1) Be applicable to the experience and training of the workers and conditions in the workplace
- (2) Meet the requirements of Article 120 and
- (3) Apply to fixed, permanently installed equipment, temporarily installed equipment, and portable equipment

The responsibilities of the employer include:

- (1) Providing the equipment necessary to execute lockout/tagout procedures
- (2) Providing lockout/tagout training to workers. NFPA 70E mandates that only qualified persons may cross the limited approach boundary. All persons performing LOTO and verification of absence of voltage must be qualified and meet the all of the training requirements in NFPA 70E for “qualified persons”
- (3) Auditing the lockout/tagout program annually
- (4) Auditing execution of at least one lockout/tagout procedure in progress annually



2) Lockout/Tagout Principles

NFPA 70E provides prescriptive direction that clearly states: electrical conductors and circuit parts are not to be considered to be in an ESWC until all of the requirements of Article 120 have been met. One cannot simply use the steps in Article 120 to establish and verify an ESWC. Safe work practices applicable to the circuit voltage and energy level must be used in accordance with Article 130 until such time that electrical conductors and circuit parts are in an ESWC. In all cases, approach to exposed conductors or circuit parts and the use of a test instrument to verify the absence of voltage, requires all necessary PPE identified in the shock and arc flash risk assessments.

All employees that could be exposed either directly or indirectly must be involved in the LOTO process. LOTO procedures must be developed for existing equipment and systems using suitable documentation and must also be reviewed to ensure that no electrical circuit interlock operation can re-energize the circuit being worked on. All sources of energy must be controlled to minimize exposure to electrical hazards. Locks and tags may only be applied to disconnecting means. Control devices, such as pushbuttons are never permitted as a primary isolating device. All LOTO devices must be readily identifiable as a LOTO device. The LOTO procedure must be coordinated with all procedures to control exposure to electrical energy as well as other hazardous energy. NFPA 70E recognizes two forms of LOTO. Simple LOTO requires a qualified person to be in charge. Complex LOTO recognizes a “person in charge” with overall responsibility.



3) Lockout/Tagout Equipment

NFPA 70E provides prescriptive requirements for the types of and use of equipment in a LOTO procedure. These requirements mirror applicable OSHA standards. It is imperative that the employer fully understand these requirements before purchasing LOTO equipment, training employees in the use of that equipment, and providing that equipment to the jobsite for use in a LOTO procedure. This includes but is not limited to; the application of LOTO devices, and tagout devices.

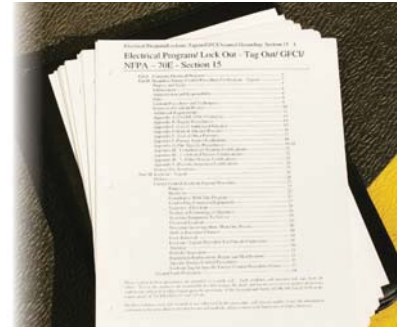
4) Lockout/Tagout Procedures

All employers must maintain copies of the LOTO procedures used. Each LOTO procedure must be planned. Up-to-date single-line drawings must be considered to locate all sources of energy. The plan must also identify persons who may be exposed to an electrical hazard during the procedure and the required PPE. The plan for each procedure must identify the person in charge and the person responsible for coordinating and verifying that the procedure has been implemented. NFPA 70E provides additional information on both simple and complex LOTO procedures for employers to consider as they develop their own procedures. The plan must also consider procedures to; deenergize, release stored electrical or mechanical energy, and how to verify that a disconnecting means opened. The procedure must also identify how to verify equipment cannot be restarted, the process for verifying absence of voltage and the application of temporary protective grounding equipment where required. Planning must also include how to address a shift change, coordination with other related jobs/work tasks, and accountability for personnel. Procedures must include steps for lockout tag out application, removal of lockout tag out devices, temporary release for testing or positioning, and release for return to service.

5) Process for Establishing and Verifying an Electrically Safe Work Condition

The last section in Article 120 addresses a process for establishing and verifying an ESWC. These steps mirror the OSHA requirements in 1910.333(b)(2). The steps provided in this section provide the user of this standard with prescriptive methods to meet the performance-based requirements seen in 1910.333(b)(2).

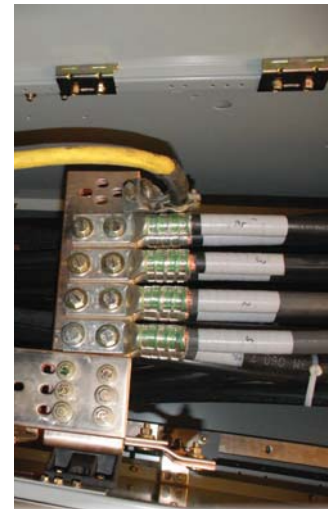
It is important to note that NFPA 70E does not recognize the implementation of an ESWC by simply following the steps. All of the requirements of article 120 must be met in order to consider electrical conductors and circuit parts in an ESWC.



Applicable Occupational Safety and Health Administration (OSHA) Standards

As described earlier, there are a number of different types of energy. There are also a number of different operations in which these hazards can be presented. To ensure all hazardous energy is effectively controlled OSHA has established a number of regulations governing the procedures of LOTO.

The General Industry Standard 1910.147 - The Control of Hazardous Energy applies to the control of energy during servicing and/or maintenance of machines and equipment. This would include mechanical, pneumatic, electrical, and any other energy sources. It does not cover construction activity, installations for the purpose of power generation, transmission and distribution, and electrical energy for "electric utilization installations." Construction LOTO for controlling electrical energy is addressed in the 1926.417 Lockout and tagging of circuits. This standard offers a brief statement requiring that circuits be deenergized, made inoperative and have tags attached. LOTO rules for power transmission and distribution can be found in 1910.269 Electric Power Generation, Transmission, and Distribution for General Industry and Subpart V Power Transmission and Distribution 1926.950 General requirements for Construction. Other electrical installations are governed by the General Industry standards in Subpart S Electrical. LOTO from this Subpart is specifically addressed in 1910.333 Selection and use of work practices.



Each of these standards has basic requirements in common. In fact, OSHA finds an electrical LOTO program using the procedures in 1910.147 compliant with 1910.333 so long as the procedures include:

- 1) a qualified person ensuring tests are performed to verify the circuit is deenergized and cannot be inadvertently energized or energized by induced voltage or backfeed, and
- 2) if a tag alone is used, an additional safety measure is used that includes the removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device.

Although the regulations have similarities, compliance often mandates that one navigate these standards to address requirements applicable to the unique steps for tasks in given operation. For example, in power transmission and distribution, OSHA authorizes the system operator to place and remove LOTO devices that are in a central location and inaccessible to the authorized employees. However, the employer's hazardous energy control procedures must still provide employees the same level of personal control they would have in personal LOTO.



Electrically Safe Work Condition

In the example cited above, the employer must decide how to meet the level of protection required. This is common in OSHA standards. They are written in performance-based language leaving the employer to determine procedures. When a compliance inspection is conducted, OSHA may defer to consensus standards to compare the effectiveness of the employers' procedures with industry accepted practice.

This leads back to the purpose of this Guide. In the case of electrical LOTO for *NEC* installations, NFPA 70E is used. It calls for live energized conductors or circuit parts to be placed in an "electrically safe work condition" before employees can cross the limited approach boundary or interact with equipment where conductors or circuit parts are not exposed, but in increased likelihood of injury from an exposure to an arc flash hazard exists. An electrically safe work condition is defined as "A state in which an electrical conductor or circuit part has been disconnected from the energized parts, locked/tagged in accordance with established standards, tested to verify the absence of voltage, and if necessary, temporarily grounded for personnel protection." This Guide will provide simplified instructions for achieving an electrically safe work condition. It offers the basics of compliance. All electrical contractors should become familiar with NFPA 70E and the applicable OSHA regulations to ensure the safety of their employees.

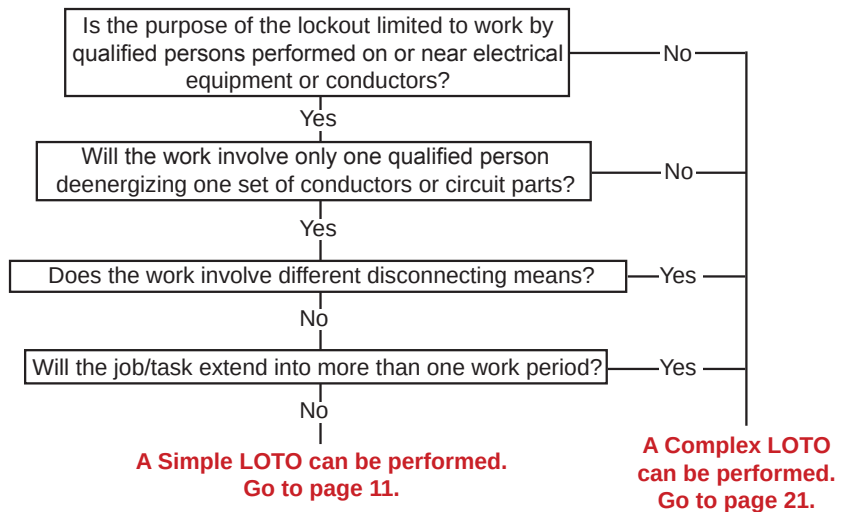


LOTO PREPARATION

1. Review the Company Written LOTO Plan.
2. Identify all energy sources including stored energy.
3. Locate all disconnecting means and identify procedures to release stored energy.
4. Determine the means for verifying disconnection.
5. Identify all workers who may be affected or exposed by the LOTO.
6. Ensure that all employees are trained to the degree necessary to execute their responsibilities as related to the LOTO procedure.
7. Identify the appropriate test instrument that will be used to verify absence of voltage.
8. Develop procedures* for verifying operability of test instrument and determine appropriate procedure.
9. Determine the need for temporary protective grounding.
10. Develop the procedures for controlling energy.
11. Coordinate electrical LOTO procedures with other means of hazardous energy control.

* NOTE: Field and test lab procedures.

HAZARDOUS ELECTRICAL ENERGY CONTROL PROCEDURES DETERMINATION



SIMPLE LOTO PROCEDURE

Step 1. Notify Personnel

All employees need to be made aware that a lockout/tagout is going to take place.



Affected employees
Informed power will be off, the reason for it and not to operate equipment



Responsible (qualified) Employee
Informed of all energy sources and location including stored energy

SIMPLE LOTO PROCEDURE

Step 2. Determine all possible sources of electrical supply

Check applicable up-to-date drawings, diagrams and identification tags.



SIMPLE LOTO PROCEDURE

Step 3. Disconnect and Deenergize

The responsible qualified person shall ensure the load is interrupted and the disconnecting device is opened from all energy sources to deenergize the circuit or equipment.

Interrupt load -
Steps shall be taken
to interrupt the load.



Deenergize -
Operate disconnecting
means and verify
disconnection (visually
verify blades open).

SIMPLE LOTO PROCEDURE

Step 4. Release Stored Energy

After disconnecting and deenergizing, residual energy may remain stored in the equipment or circuits. Electrical energy from capacitors must be discharged and high capacitance elements short circuited according to established procedures. Procedures must also be coordinated with other LOTO efforts and stored energy such as hydraulic, pneumatic, and mechanical must be released.



Discharge electrical energy



Release all other stored energy

SIMPLE LOTO PROCEDURE

Step 5. Apply Locks and/or Tags

Apply locks (or tags) to all disconnecting means used to deenergize the circuit. A tag without the use of a lock may only be applied in situations where the equipment does not allow a lock. If a tag is used, another safety measure must be used to protect employees. The responsible person must account for all exposed employees.



Lock Use

The exposed employee shall apply a lock or be accounted for by other means.



Tag Use

Each employee shall apply a tag, sign tag or be accounted for by other means.



Additional safety measure with Tag

(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.)

SIMPLE LOTO PROCEDURE

Step 6. Verification - Attempt to Operate

Ensure the equipment is or circuit is deenergized and cannot be reenergized with the lock or tag in place by attempting to operate the equipment, switches and/or other disconnecting means.



SIMPLE LOTO PROCEDURE

Step 7 Verification - Test for the Absence of Voltage*

Testing for the absence of voltage is a critical step. The test instrument itself must be tested before and after testing for absence of voltage.

a) Select an appropriate test instrument



b) Inspect the test instrument



** NOTE: Employees are required to be trained to select the proper test instrument in accordance with NFPA 70E. Only qualified persons are permitted to use a test instrument. Qualified persons must be trained to select an appropriate test instrument and must demonstrate how to use the test instrument to verify the absence of voltage, including indications provided by the device. The training must also include all limitations of the test instrument.*

SIMPLE LOTO PROCEDURE

Step 7 (continued). Verification - Test for the Absence of Voltage

Testing for the absence of voltage is a critical step. The test instrument itself must be tested before and after testing for absence of voltage. Appropriate PPE must be worn in accordance with the shock and arc flash risk assessments when verifying the absence of voltage.

c) Verify proper operation of the test instrument.*



d) Test for absence of voltage.



e) Verify proper operation of test instrument.



** Sample Procedure - Verification of test instrument*

- 1. Test on known voltage source to verify proper operation of the test instrument.*
- 2. Test for absence of voltage.*
- 3. Retest test instrument on known voltage source to verify proper operation of the test instrument.*

SIMPLE LOTO PROCEDURE

Step 8. Apply Temporary Protective Grounding Equipment

Where there is potential for induced voltage, release of stored electrical energy or other potential contact with energized parts, apply temporary protective grounding equipment rated for the maximum available fault current for the time necessary to clear the fault.

Note that the "Application of temporary protective grounding equipment, after voltage test" is considered to be a task that has a likelihood of an arc flash incident. After an ESWC is implemented, the application of temporary protective grounding equipment requires all PPE determined in the shock and arc flash risk assessments to be worn.



SIMPLE LOTO PROCEDURE

Step 9. Perform Work

Once all of the required steps to create an ESWC, including the LOTO procedure, have been completed according the established procedures, work can be performed using approved work practices.

The LOTO will remain in place until work is complete. If testing or positioning requires the equipment to be reenergized, contact your supervisor for applicable procedures. For additional information see OSHA 1910.147(f)(1). If work must extend for more than one work period, one energy source, one work location, or if another individual or crew is involved, the Complex LOTO procedure must be used.



REMOVAL OF SIMPLE LOTO ²



1. Perform quality tests/checks
2. Remove locks and/or tags
3. Notify owner and return disconnect to operating condition
4. Verify task complete
5. Remove tools and equipment
6. Remove temporary protective grounding equipment
7. Notify personnel

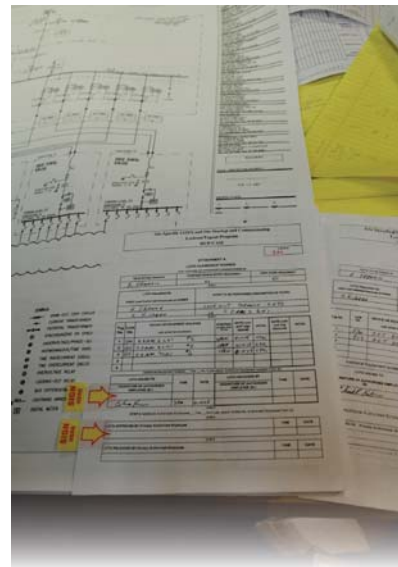
² In a Simple LOTO, if the individual who installed the LOTO is not present to remove the lock and/or tag, an attempt must be made to contact them. See OSHA 1910.147(e)(3) "Exemption to paragraph (e)(3)."

COMPLEX LOTO PROCEDURE

Step 1. Identify a "Person-in-Charge"

A person-in-charge must be assigned at the location to install or direct the installation of lockout and/or tagout devices and prepare a written plan for the LOTO that:

- a) addresses how the energy will be controlled,
- b) ensures all exposed employees understand the hazards,
- c) establishes a method for accounting for all exposed persons involved in the LOTO,
- d) defines the transfer of LOTO to successive shifts and
- e) defines how effective communication with all employees is to be accomplished.



COMPLEX LOTO PROCEDURE

Step 2. Prepare a written plan for this LOTO

The person-in-charge must prepare a written plan outlining the procedures for the LOTO. Be sure to review the procedures for how employees are accounted for during the course of the LOTO and for changes in shifts should they occur.



Person-in-charge shall lock his/her key in a "lock box."



Sign in/out log for all personnel entering the area.

COMPLEX LOTO PROCEDURE

Step 3. Notify Personnel

All personnel need to be made aware that a lockout/tagout is going to take place.



Affected Employees

Informed power will be off, the reason for it and not to operate equipment



Authorized Employees

Informed of equipment/circuit to be locked or tagged out and procedures

COMPLEX LOTO PROCEDURE

Step 4. Determine all possible sources of electrical supply

Check applicable up-to-date drawings, diagrams and identification tags.



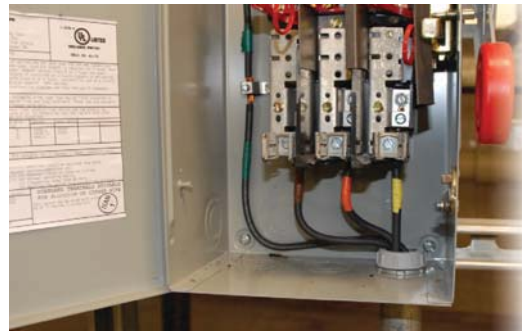
COMPLEX LOTO PROCEDURE

Step 5. Disconnect and Deenergize

The responsible qualified person shall ensure the load is interrupted and the disconnecting device is opened from all energy sources to deenergize the circuit or equipment.



Interrupt load - Steps shall be taken to interrupt the load.



Deenergize - Operate disconnecting means and verify disconnection. (Visually verify blades open.)

COMPLEX LOTO PROCEDURE

Step 6. Release Stored Energy

After disconnecting and deenergizing, residual energy may remain stored in the equipment or circuits. Electrical energy from capacitors must be discharged and high capacitance elements short circuited according to established procedures. Procedures must also be coordinated with other LOTO efforts and stored energy such as hydraulic, pneumatic, and mechanical must be released.



Discharge electrical energy



Release all other stored energy

COMPLEX LOTO PROCEDURE

Step 7. Apply Locks and/or Tags

Apply locks (or tags) to all disconnecting means used to deenergize the circuit. A tag without the use of a lock may only be applied in situations where the equipment does not allow a lock. If a tag is used, another safety measure must be used to protect employees. The responsible person must account for all exposed employees.



Lock Use

Each exposed employee shall apply a lock or be accounted for by other means. Person in charge shall lock keys in box.



Tag Use

Each employee shall apply a tag, sign tag or be accounted for by other means.

Additional safety measure with Tag

(Removal of isolating circuit element, blocking of controlling switch, opening of extra disconnecting device, or removal of valve handle to reduce likelihood of inadvertent energization.)

COMPLEX LOTO PROCEDURE

Step 8. Verification - Attempt to Operate

Ensure the equipment or circuit is deenergized and cannot be reenergized with the lock or tag in place by attempting to operate the equipment, switches and/or other disconnecting means.



COMPLEX LOTO PROCEDURE

Step 9. Verification - Test for the Absence of Voltage*

Testing for the absence of voltage is a critical step. The test instrument itself must be tested before and after testing for absence of voltage.

a) Select an appropriate test instrument.



b) Inspect the test instrument.



**NOTE: Employees are required to be trained to select the proper test instrument in accordance with NFPA 70E. Only qualified persons are permitted to use a test instrument. Qualified persons must be trained to select an appropriate test instrument and must demonstrate how to use the test instrument to verify the absence of voltage, including indications provided by the device. The training must also include all limitations of the test instrument.*

COMPLEX LOTO PROCEDURE

Step 9 (continued). Verification - Test for the Absence of Voltage*

Testing for the absence of voltage is a critical step. The test instrument itself must be tested before and after testing for absence of voltage.

- c) Verify proper operation of the test instrument.
- d) Test for absence of voltage.
- e) Verify proper operation of the test instrument.
- f) Use appropriate PPE as required in the shock and arc flash risk assessments during absence of voltage testing.



** Sample Procedure - Verification of test instrument*

1. Test on known voltage source to verify proper operation of the test instrument.
2. Test for absence of voltage.
3. Retest test instrument on known voltage source to verify proper operation of the test instrument.

COMPLEX LOTO PROCEDURE

Step 10. Apply Temporary Protective Grounding Equipment

Where there is potential for induced voltage, release of stored electrical energy or other potential contact with energized parts, apply temporary protective grounding equipment rated for the maximum available fault current for the time necessary to clear the fault.

Note that the "Application of temporary protective grounding equipment, after voltage test" is considered to be a task that has a likelihood of an arc flash incident. After an ESWC is implemented, the application of temporary protective grounding equipment requires all PPE determined in the shock and arc flash risk assessments to be worn.



COMPLEX LOTO PROCEDURE

Step 11. Perform Work

Once all of the required steps to create an ESWC, including the LOTO procedure, have been completed according the established procedures, work can be performed using approved work practices.

The LOTO will remain in place until work is complete. If testing or positioning requires the equipment to be reenergized, contact the person-charge for applicable procedures. For additional information see OSHA 1910.147(f)(1). In the event of a shift/personnel change, the person-in-charge shall place or supervise the placement of a special supervisory lock that will remain in place until the new authorized person(s) begin work and are accounted for in accordance with the procedure in the plan or apply their own personal locks.



REMOVAL OF COMPLEX LOTO³



1. Notify personnel
2. Perform quality tests/checks
3. Remove of locks and/or tags
4. Notify owner and return disconnect to operating condition
5. Verify task complete
6. Remove tools and equipment
7. Remove temporary grounding equipment

³ If the individual(s) who installed the LOTO is/are not present to remove a lock and/or tag an attempt must be made to contact them. See OSHA 1910.147(e)(3) "Exemption to paragraph (e)(3)." In a Complex LOTO, the person-in-charge will be responsible for accounting for all persons involved.

GLOSSARY

This glossary includes definitions found in NFPA 70E and/or OSHA Regulations. It also includes explanations (not definitions) of terms used in this manual as referenced in those documents to clarify procedures described in this manual.

- **Affected Employee (OSHA)** - an employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout and/or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.
- **Authorized Employee (OSHA)** - an employee who locks out or tags out machines or equipment in order to perform service or maintenance on that machine or equipment. (An "Affected Employee" becomes an "Authorized Employee" when that employee's duties include performing servicing or maintenance under this section.)
- **Complex Lockout/Tagout** - a procedure described in NFPA 70E where multiple energy sources, crews, locations, or employers exist, or there are different disconnecting means or the job or task continues for more than one work period which requires a person in charge to be located at the job and to develop a written plan for the given LOTO.
- **Complex Lockout/Tagout Written Plan** - a written plan addressing the specific procedures for a given Complex LOTO
- **Deenergized (NFPA 70E)** - free from any electrical connection to a source of potential difference and from electrical charge; not having a potential different from that of the earth.
- **Disconnecting Means (NFPA 70E)** - a device, or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.
- **Electrically Safe Work Condition (NFPA 70E)** - a state in which an electrical conductor or circuit part has been disconnected from energized parts, locked/tagged in accordance with established standards, tested to verify the absence of voltage, and, if necessary, temporarily grounded for personnel protection.

- **Energy isolating device (OSHA)** - a 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 line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.
- **Involved Employee (NFPA 70E)** - each person who could be exposed directly or indirectly to a source of electrical energy. (Examples: Direct exposure - a qualified electrician working on the motor starter control, power circuits, or motor. Indirect exposure - a person working on the coupling between the motor and compressor.)
- **Lockout (NFPA 70E)** - installing a lockout device on all sources of hazardous energy such that operation of the disconnecting means is prohibited and forcible removal of the lock is required to operate the disconnect means.
- **Person-in-Charge (NFPA 70E)** - the individual in a complex LOTO at that location who is responsible for preparing the written plan and methods to account for all employees involved in the LOTO
- **Primary Authorized Employee** - term created in OSHA interpretation letter similar to the responsible employee as referenced by NFPA 70E.
- **Responsible Employee** - a named assigned per this manual to the employee referenced in NFPA 70E who will take on responsibilities in a Simple LOTO where more than one individual is directly involved and authorized to apply a lock or tag (See also Primary Authorized Employee)
- **Tagout** - installing a tagout device on all sources of hazardous energy, such that operation of the disconnect means is prohibited. The tagout device shall be installed in the same position available for the lockout device.

LOCKOUT/TAGOUT DEVICE CHECKLIST

Lockout Device:

- ☐ readily identifiable as lockout devices.
- ☐ used only for control of exposure to electrical energy hazards shall be unique.
- ☐ identifies the individual who installed it.
- ☐ will prevent operation of disconnecting means unless undue force or the use of tools is employed to remove it.
- ☐ is suitable for the environment and for the duration of the lockout.
- ☐ the key or combination remains in the possession of the individual installing the lock or the person in charge.

Tagout Device:

- ☐ includes a tag with an attachment means.
- ☐ readily identifiable as a tagout device.
- ☐ suitable for the environment and duration of the tagout.
- ☐ capable of withstanding 224.4 N (50 lbs.) of force exerted at a right angle to disconnecting means surface.
- ☐ nonreusable, attachable by hand, self-locking, and nonreleasable, equal to an all-environmental tolerant nylon cable tie.
- ☐ contains a statement prohibiting unauthorized operation of the disconnecting means or removal of the tag.
- ☐ contains a statement prohibiting unauthorized removal of the device.

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Program Developed by:

Joe O'Connor
John Caporelli
INTEC, Inc.
PO Box 163
Waverly, PA 18471
www.intecweb.com
800.745.4818
Fax: 800.949.1930

Program Edited by:

James B. Lancour, PhD
jbl consulting and training
jblancour@pngusa.net
678.457.6108

Photographs Contributed by:

Michael Johnston
Executive Director,
Standards and Safety
NECA

Todd Cratty
M45 Marketing Services
815.282.1606

Ryan Hand
Michael Maffioli
Wilson Electric Co.

Brad Munda
Kyle Borneman
Morse Electric, Inc.

Jeff Costello
Larry McCrae, Inc.

Dave Ganther
Bill Inforzato
J.P. Rainey Company, Inc.

George Novelli
Tom McCusker
Carr and Duff, Inc.

Todd Kindred
Northern Illinois Electrical JATC
619 Southrock Drive
Rockford, IL 61102
815.969.8484

Jim Dollard
Local 98
Philadelphia, PA



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National Electrical Contractors Association
3 Bethesda Metro Center, Suite 1100
Bethesda, MD 20814
(301) 215-3110

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