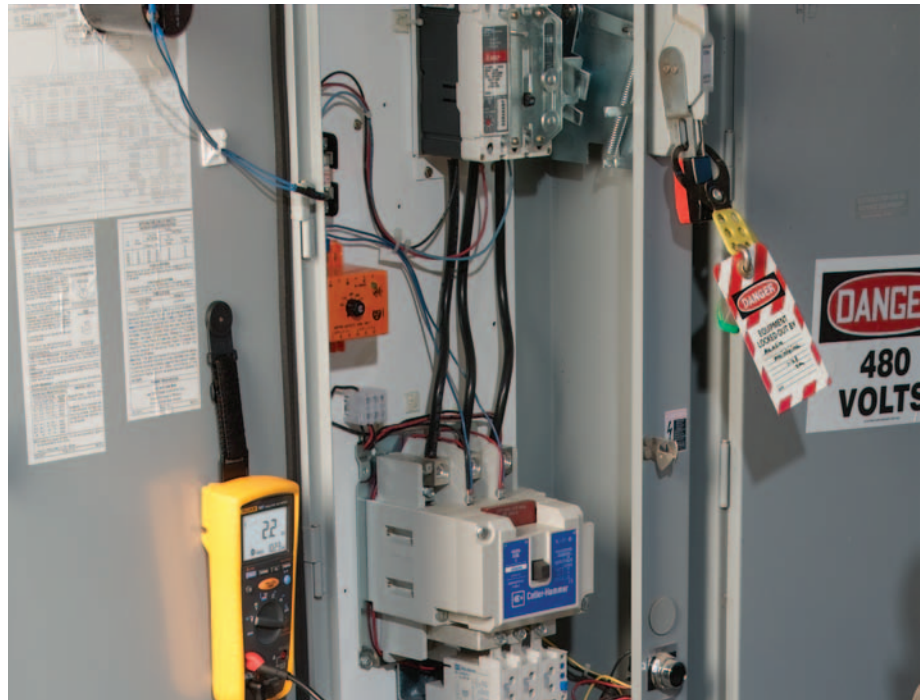


Verifying lockout/tagout electrically safe status

For non-electricians working in electrical environments

Application Note

Lockout/Tagout procedures specify the steps electricians must follow to remove power from an electrical circuit or panel, and to lock out and tag the panel or circuit, so that no one can re-energize it while work is in progress.



An increasing number of specialty contractors, ranging from health inspectors to thermographers, must work around electrical panels and exposed circuits. For their own safety, these contractors and anyone else who may be exposed to live voltages should:

- Understand Lockout/Tagout procedures
- Know how to verify that power has been removed from the environment before beginning work, especially if live circuits may be nearby

Contractors in these circumstances should carry a non-contact voltage detector in their shirt pocket to verify that their work environment is safe in terms of exposure to live circuits

or conductors. These non-contact detectors are relatively inexpensive and industrial models such as the Fluke 1AC are safety rated up to 1000 volts AC.

About lockout/tagout

Lockout/Tagout electrical disconnect principles and procedures are described in industry standards like NFPA 70E, *Standard for Electrical Safety in the Workplace*, published by the National Fire Protection Association.

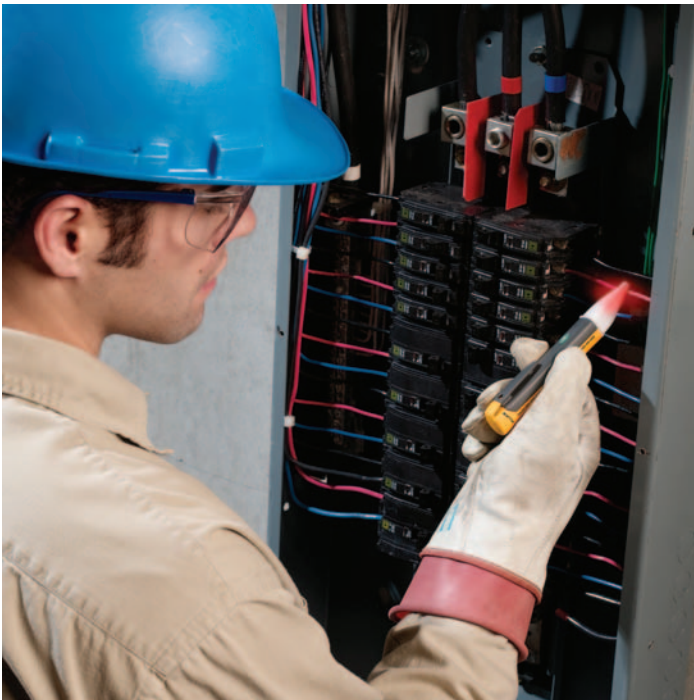
NFPA 70E requires those working on exposed conductors and circuit components operating at 50 volts or more to use lockout/tagout devices and procedures and be properly

trained. This document also outlines specific circumstances when work on live circuits is permitted and sets approach boundaries for both qualified and unqualified personnel.

Standard lockout/tagout process

Conducted by the electrician

- 1) Open disconnecting device(s) for each source of power supply.
- 2) Visually verify that all blades of the disconnecting devices are fully open or that circuit breakers are in the fully disconnected position
- 3) Use a voltage detector or other test tool to verify that the panel/circuit is de-energized.



**Verifying lockout/tagout
Conducted by the
non-electrician**

- 1) Visually verify that the electrician has applied Lockout/Tagout devices in accordance with a documented and established policy and that he/she has declared the area or equipment electrically safe.
- 2) Test your voltage detector on a known live circuit to make sure it works.
- 3) Use your voltage detector to test the surrounding equipment cabinets and circuit panels (covers, not wiring) to insure that everything is de-energized or grounded.

**Only after the area has been
declared electrically safe
should you:**

- 4) Test each phase conductor or circuit breaker for the absence of voltage. The wand should read no live electricity on each test.
- 5) After each test, check the voltage detector wand again on the known live circuit.

Only after you have verified the absence of voltage should you begin work on the equipment to be serviced or in the area where exposed electrical conductors are present.

Fluke. *Keeping your world
up and running.*

Fluke Corporation

PO Box 9090, Everett, WA USA 98206

Fluke Europe B.V.
PO Box 1186, 5602 BD
Eindhoven, The Netherlands

For more information call:
In the U.S.A. (800) 443-5853 or
Fax (425) 446-5116
In Europe/M-East/Africa (31 40) 2 675 200 or
Fax (31 40) 2 675 222
In Canada (800) 36-FLUKE or
Fax (905) 890-6866
From other countries +1 (425) 446-5500 or
Fax +1 (425) 446-5116
Web access: <http://www.fluke.com>

©2005 Fluke Corporation. All rights reserved.
Printed in U.S.A. 7/2005 2507362 A-EN-N Rev A