



DEPARTMENT OF THE NAVY

NAVAL TRAINING CENTER
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GREAT LAKES, ILLINOIS 60088-2845

NTCGLAKESINST 5100.30C
N33

MAY 24 1990

NTC GREAT LAKES (COMPLEX²) INSTRUCTION 5100.30C

From: Commander, Naval Training Center, Great Lakes

Subj: ELECTRICAL SAFETY

Ref: (a) National Electric Code
(b) 29 CFR 1910 Subpart S
(c) OPNAVINST 5100.23E
(d) OPNAVINST 5100.19C
(e) 29 CFR 1910.137
(f) SPAWARINST 5100.9D

Encl: (1) Electrical Safety Inspection Guide

1. Purpose. To update the Electrical Safety Program at Naval Training Center (NTC), Great Lakes (Complex²).

2. Cancellation. NTCGLAKESINST 5100.30B. This instruction has been substantially revised and should be reviewed in its entirety.

3. Discussion. References (a) and (b) are standards for electrical systems, installations, tools and equipment. References (c) and (d) are ashore and afloat safety programs respectively. Reference (e) applies to test and inspection of electrically insulated gloves. Reference (f) applies to maintenance and repair of electronic equipment ashore. This instruction is designed to improve electrical safety by minimizing electrical fire and shock hazards. Poor tension in electrical receptacles increases resistance which eventually results in an arc or fire. To protect personnel against short circuits, the grounding contact tension must be maintained so the grounding path is not breached. Incorrect wiring, improper installation and worn electrical equipment pose hazards to personnel and equipment. Enclosure (1) is an electrical inspection guide. Electrical safety includes implementing protective measures designed to prevent injuries associated with electrical hazards, use of defective electrical insulated gloves, inadequate supervision and/or improper maintenance procedures.

4. Policy. Activities are required to comply with the Material Maintenance Management (3M) provisions, when applicable. Additionally, classroom spaces which are directly related to fleet training evolutions must comply with the applicable provisions of reference (d) and the NAVSHIPS Technical manual, Chapter 300. All other spaces and non-training evolutions must comply with references (a) through (c), and (e). The maintenance and repair of electronic equipment ashore is governed by reference (f). Regulatory conflicts that arise within the fleet simulated training environments are to be resolved in favor of reference (d).

5. Responsibilities

a. The Command Safety Representative/Designated Electrical Safety Officer has oversight of the testing and inspection of electrical equipment/systems. The following will be implemented:

(1) A program and plan of annual inspections of electrical equipment including receptacles to detect and correct unsafe conditions in all buildings (enclosure (1)), will be established. Electrical equipment used around swimming pools shall be checked daily prior to use.

(2) Installations and changes to electrical wiring, fitting, attachments, or other electrical appliances shall only be performed by qualified personnel.

(3) Defective electrical cords, lighting fixtures, appliances, receptacles, and switches shall be reported immediately to the Building Maintenance personnel for corrective action.

(4) All electrical apparatus must bear the label of/or be listed by a testing/listing facility (i.e., Underwriters Laboratories or Factory Mutual).

(5) Ungrounded extension cords are prohibited.

(6) Electric space heaters will be equipped with tip over shut-off switches.

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(7) Surge protectors plugged into each other are not authorized.

(8) Personal electrical equipment, approved by the command, must be in compliance with the provisions of this instruction.

(9) An electrical tool issue, testing and repair program shall be instituted. Procedures governing tool control, safety, and use should be published at the command level.

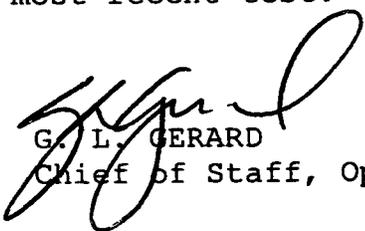
(10) 125 volt, single phase, 15-20 ampere receptacle installations shall have GFCI protection as follows:

(a) Outdoors where there is direct grade level access (located not more than 6 feet 6 inches above the ground) to the receptacles.

(b) In bathrooms, kitchens, deep sink rooms and where receptacles are within 6 feet of sinks.

(c) In garages. This does not apply to ceiling mounted receptacles installed for connection of a garage door opener or for appliances occupying dedicated space which are cord and plug connected.

(11) Test and inspection of electrical insulated gloves will be done in accordance with reference (e) prior to first issue, and every six (6) months or when damage is evident. Maintain test records for the most recent test.


G. L. GERARD
Chief of Staff, Operations

Distribution:
NTCGLAKESINST 5216.5M
List I, II (Case A), III A, B and C

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ELECTRICAL SAFETY INSPECTION GUIDE

1. RECEPTACLES/SWITCHES (INCLUDES COVER PLATES)

- a. Physical integrity (visual inspection)
 - (1) Not cracked or broken.
 - (2) Not charred.
 - (3) No arcing when used.
 - (4) Junction box - no unused openings.
- b. Circuit test - observe lights/colors (grounding continuity, correct polarity).
- c. Retention force
 - (1) Circuit tester does not feel loose in the receptacle.
 - (2) At least 4 ounce pull tension.
- d. Ground-Fault Circuit Interrupter (GFCI)
 - (1) GFCI required within 6 feet of a water source (not scuttlebutts or clothes washers).
 - (2) Test both sides of duplex receptacles.
 - (3) Use GFCI tester/button.

2. ELECTRICAL EQUIPMENT

- a. Covers in place so electrical conductors are not exposed.
- b. Power cord
 - (1) Not frayed.
 - (2) Strain relief secure.
 - (3) Grounding pin in tact/not loose or missing.
 - (4) Extension cord not used.
- c. Handy box extension cords are prohibited.
- d. Multi-receptacle adapters (octopus) are prohibited.

3. POWER PANELS

- a. Labeled.

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b. Aligned so that bus bar is not exposed.

c. No unused openings (openings designed for circuit breakers or conduits).

4. LIGHT FIXTURES

a. 8 feet or lower - guard in place.

b. 8 feet or higher - no guard required (exception: workshops with flying materials, vibration or movement of large items, such as, bar stock or wood).

