

INFORMATION MEMORANDUM 82-X-62

TO: All OSH Directors, Supervisors and Field Personnel

FROM: William M. Lybrand, Director of OSH

SUBJECT: Ground-Fault Protection on Construction Sites

DATE: November 22, 1982

PURPOSE

Since the ground-fault protection standard has been issued, a number of questions have been raised in federal and state OSH programs concerning its requirements. This memorandum clarifies the provisions of the standard which have been questioned. It addresses both the ground-fault circuit interrupters and the assured equipment grounding conductor program, and the citing of such violations.

GUIDELINES

The following are guidelines to be followed in inspecting for compliance with Subarticle 7, Section 1926.400(h):

- a. First, check to make sure that the hazards contemplated by the standard are present. For the purpose of this regulation, the hazards of possible electrical shock or electrocution exist in locations where the employee is exposed to incomplete structures or foundations, mud, concrete (both cured and uncured), structural steel, and in areas usually exposed to the environment. An employee exposed to conditions such as these is in contact with ground and is subject to electric shock by providing a path to ground for current. However, portions of buildings which have been completed and no longer expose the employee to the weather or large areas of exposed grounded metal, and are provided with grounding type receptacles, are not considered to present severe ground-fault hazards. Therefore, the standard should not apply in these areas.
- b. Secondly, check to ensure that the employer has provided either GFCIs or assured equipment grounding conductor program to protect his employees.
- c. Thirdly, if the employer has chosen the GFCI option, check receptacles:
 1. for voltage,
 2. for current rating,
 3. to see whether they are part of the permanent wiring of the building or structure.

Only 120-volt, 15- and 20-ampere receptacles are covered by this standard. If the employer has tried to avoid GFCI requirements by installing receptacles with other ratings (e.g., 30-ampere receptacles or circuit breakers), violations of other OSHA regulations are usually involved. Typically, violations of the following 1981 National Electrical Code Sections are indicated: 210-19(a), 210-21(b) and 430-42(c).

Under this standard, receptacles which are part of the permanent wiring of the building or structure are not required to be protected by GFCIs. However, the employer cannot avoid the requirements simply by powering tools by means of extension cords (cord sets) from permanent receptacles adjacent to or at the construction site. Generally, these cord sets are used as temporary wiring (i.e., as a substitute for the fixed wiring of a structure) to provide power to areas remote from the permanent receptacle. Therefore, for the purpose of this regulation, the receptacles (or cord connectors) at the ends of such cord sets are “receptacles which are not a part of the permanent wiring of the building or structure”, and a GFCI is required to protect employees if they are exposed to ground-fault hazards. See attached diagrams #1, #2 and #3.

d. Lastly, if the employer has chosen the assured equipment grounding conductor program, check to ensure that he has followed all of the requirements. Specifically check:

1. that the employer has a written description of his program;
2. that one or more competent persons have been designed to carry out the program;
3. that the employer is conducting a visual inspection before each day’s use of each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug for external defects, such as deformed or missing pins or insulation damage and for indication of possible interior damage (receptacles which are fixed and not exposed to damage are not subject to a each day’s use visual inspection).
4. that no damage or defective equipment is being used;
5. that the required tests have been performed, which include:
 - (a) tests before first use,
 - (b) tests before equipment is returned to service following any repair,
 - (c) tests before equipment is used after any accident,
 - (d) tests at intervals not to exceed 3 months; and
6. that these tests have been recorded, using the following guidelines:
 - (a) identification may be kept by means of a log (serial number and/or company number), color coding (which must be recorded), or other effective means,

- (b) receptacles which are non-permanent are required to be individually or other effective means,
- (c) cord sets may be color coded together, and
- (d) plug and cord connected equipment must be individually identified.

The employer may elect to have another employer (i.e., the electrical contractor) to implement the mechanics of an assured equipment grounding conductor program, but he is still responsible to ensure that the program implemented is adequate, feasible and properly enforced. His overall responsibility for protection of his employees cannot be delegated to another employer.

The tests listed in 5. (a), (b), (c) and (d) above must be performed on all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and all cord- and plug-connected equipment required to be grounded. See attached diagram #4. In this case, tools and cord sets used in areas which do not present ground-fault hazards still require protection if they are available for use in the areas previously mentioned.

CITING

- a. If neither GFCI's nor an assured equipment grounding conductor program is used, cite under Section 1926.400(h)(1) for not having one of the two.
- b. If GFCI's are used, but they are not properly connected or faulty, cite under Section 1926.400(h)(2).
- c. If an assured equipment grounding conductor program is used, cite under Section 1926.400(h)(3), using the appropriate subparagraph or paragraphs.

NOTE: For the purpose of this memorandum, the definitions of "extension cords" and "cord sets" are interchangeable; both consist of a multi-conductor cable, of variable length, with a plug cap on one end and a body connector or receptacle box with a receptacle on the other.

EFFECTIVE DATE

This memorandum is effective upon receipt and will remain in effect until cancelled or superseded.