



**VOSH PROGRAM DIRECTIVE: 12-334A**

**ISSUED: May 15, 2009**

**SUBJECT: Electrical Standard, Subpart S of Part 1910, §§1910.302 through 1910.308**

**A. Purpose.**

**CHANGE I:** This directive establishes enforcement policy and provides explanation of the Electrical Standard, Subpart S, to ensure uniform enforcement. **CHANGE II:** These amendments provides minor clarifications to assist employers in complying with the existing standard and to make typographical corrections that do not affect the substantive requirements or coverage of the standards involved.

*This Program Directive is an internal guideline, not a statutory or regulatory rule, and is intended to provide instructions to VOSH personnel regarding internal operation of the Virginia Occupational Safety and Health Program and is solely for the benefit of the program. This document is not subject to the Virginia Register Act or the Administrative Process Act; it does not have general application and is not being enforced as having the force of law.*

**B. Scope.**

This directive applies to all VOSH personnel.

**C. References.**

CHANGE I: 72 FR 7135 (February 14, 2007); and  
CHANGE II: 73 FR 64202 (October 29, 2008).

**D. Cancellation.**

VOSH Program Directive 12-334 (December 1, 2007).

**E. Action.**

The Directors and Managers shall ensure that the guidelines in this program directive are followed and that compliance officers are familiar with the contents of the standard.

**F. Effective Dates.**

**CHANGE I:** December 15, 2007.

**CHANGE II:** July 15, 2009.

**G. Expiration Date.**

Not Applicable.

**H. Background.**

**CHANGE I:** On February 16, 1972, federal OSHA incorporated the 1971 edition of the National Fire Protection Association's (NFPA) National Electrical Code (NEC), NFPA 70-1971, by reference as its initial electrical standard for general industry. The Occupational Safety and Health Act of 1970 directed the Secretary to adopt existing national consensus standards as federal OSHA standards within two years of the effective date of the OSH Act. In incorporating the 1971 NEC by reference, federal OSHA made the entire 1971 NEC applicable to all covered electrical installations made after March 15, 1972. For covered installations made before that date, federal OSHA listed about 16 provisions from the 1971 NEC that applied. No other provisions of the 1971 NEC applied to these older installations, thus "grandfathering" them so that they were exempt from most of the requirements in the consensus standard. (72 FR 7138)

In 1981, federal OSHA revised its electrical installation standard for general industry and replaced the incorporation by reference of the 1971 NEC with relevant updated requirements from Part I of the 1979 edition of NFPA 70E. The revision simplified and clarified the electrical standard and updated its provisions to match the 1978 NEC (the latest edition available at the time) and structured to reduce the need for frequent revision to avoid becoming technologically obsolete. The first substantial changes came in the 1995 edition of NFPA 70E.

The 2000 edition of NFPA 70E contains a number of significant revisions, including a new, alternative method for classifying and installing equipment in Class I hazardous locations. NFPA recommended that federal OSHA revise its general industry electrical standards to reflect the latest edition of NFPA 70E, arguing that such a revision would provide a needed update to the OSHA standards and would better protect employees. This revised final rule responds to NFPA's recommendations with regard to installation safety. It also reflects federal OSHA's commitment to update its electrical standards, keep them consistent with NFPA standards, and ensure that they appropriately protect employees.

On June 26, 2007, the Safety and Health Codes Board adopted this final regulation, with an effective date of December 15, 2007.

**CHANGE II:** Following the promulgation of the final rule in 2007, federal OSHA received questions from the public regarding 29 CFR 1910.304 (b)(3)(ii).

During its August 2007 meeting in Oakland, CA, the Maritime Advisory Committee on Occupational Safety and Health (MACOSH) discussed 29 CFR 1910.304 (b)(3)(ii) and expressed its uncertainty about

the extent of the application of this provision to shipyard employment and had questions as to how federal OSHA would interpret the rule. MACOSH recommended that federal OSHA use the best available means to assist employers in complying with the requirements of the provision and that federal OSHA delay the effective date of §1910.304(b)(3)(ii) for six (6) months or until the federal OSHA can clarify the standard.

In this action, federal OSHA addressed the concerns raised by MACOSH and made one change to the regulatory text of §1910.304(b)(3)(ii) to clarify that this provision applies only to “construction-like” activities, including certain maintenance, remodeling, or repair activities, involving buildings, structures or equipment under the Part 1910 General Industry standards which do not apply to construction. This change more accurately reflects the intention of OSHA’s final rule, the coverage of Part 1910 standards and that of NFPA 70E where temporary wiring installations are used during the performance of “construction-like” activities.

On April 16, 2009, the Safety and Health Codes Board adopted the clarifications and correcting amendments to §§1910.303 and 1910.304 of the Electrical Standard, Subpart S of Part 1910, with an effective date of July 15, 2009.

## **I. Summary.**

**CHANGE I:** Federal OSHA revised and updated the provisions contained in §§1910.302 through 1910.308 of the existing Subpart S electrical installation standard. It determined that electrical hazards in the workplace pose a significant risk of injury or death to employees, and that the requirements in the revised standard, which draw heavily from the 2000 edition of the National Fire Protection association’s (NFPA) Electrical Safety Requirements for Employee Workplaces (NFPA 70E), and the 2002 edition of the National Electrical Code (NEC), are reasonably necessary to provide protection from these hazards. (72 FR 7136) [*Note: The 2000 NFPA 70E is based on the 1999 NEC.*]

The update to Subpart S applies to electrical installations and equipment utilized in workplaces in general industry and in shipyard employment, longshoring, and marine terminals. Installations exempted by Subpart S present special design considerations that are not adequately addressed in Subpart S, for example, electric power transmission and distribution installations. Such transmission and distribution installations are typically installed where they are accessible only to specifically trained and skilled employees and where unqualified persons will not have access to these installations. (72 FR 7140-41)

This revision will provide the first update of the installation requirements in the general industry electrical installation standard since 1981. It focuses on safety in the design and installation of electric equipment in the workplace. It also includes a new alternative method for classifying and installing equipment in Class I hazardous locations; new requirements for ground-fault circuit interrupters (GFCIs) and new provisions on wiring for carnivals and similar installations.

Federal OSHA also removed and reserved Appendices B and C of the current Subpart S for future use because they did not contain any material.

The following sections were also impacted by the revised final rule:

- 1) **§1910.6, Incorporation by reference**, was amended by revising the introductory text to paragraph (e). Paragraph (e)(33), which read: “ANSI C1-71, National Electrical Code, IBR approved for §1910.66 Appendix D(c)(22)(i) and (vii)” was removed and reserved. The introductory text to paragraph (q) was also revised by amending the address where NFPA materials could be purchased. Paragraph (q) (16) which read: “NFPA 70-1971, National Electrical Code, IBR approved for §1910.66 App. D(c)(2)” was removed and reserved.
- 2) **§1910.66, Powered Platforms, Manlifts, and Vehicle-Mounted Work Platforms, paragraph (c)(22)(i) of Appendix D, Existing Installations (Mandatory)**, was amended by substituting “Subpart S of this Part” for the “National Electrical Code, NFPA 70 – 1971; ANSI C1 – 1971 (Rev. of C1 – 1968)”.
- 3) **§1910.399, Definitions applicable to this subpart**, was amended by adding thirteen definitions, all but one of which are based on NFPA 70E-2000 and the 2002 NEC. These new definitions will help clarify the requirements in Subpart S. Other non-substantive changes were also made to the definitions.

**CHANGE II:** On February 14, 2007, federal OSHA published a revision of its electrical installation standard for general industry, 29 CFR part 1910, subpart S, which the Board subsequently adopted at its June 26, 2007 meeting. In this current action, federal OSHA corrected two typographical errors in Table S-3 of §1910.303 of the final rule as well as correcting “2.81” and “9.01,” the first entries under the column heads “m” and “ft,” to read “2.8” and “9.0”, respectively.

Following the promulgation of the final rule in 2007, federal OSHA received questions from the public concerning the application of §1910.304(b)(3)(ii), questions stemming from the structure of the text of the provision, questions concerning whether the standard recognizes all forms of ground-fault protection devices, and questions about whether the standard requires Ground Fault Circuit Interrupters (GFCI) to be used with branch circuits supplying temporary lighting.

As originally published, the introductory text to §1910.304(b)(3)(ii) read as follows:

“The following requirements apply to temporary wiring installations that are used during maintenance, remodeling, or repair of buildings, structures, or equipment or during similar construction-like activities.”

Federal OSHA explained that because Part 1910 does not apply to construction, it removed “construction” from the list of activities specifically mentioned in NFPA 70E and changed “similar activities” to “similar construction-like activities.” It did not, however, intend to deviate from the underlying intent of the NFPA 70E provision, which is to limit its application to activities that were construction-like in nature. Federal OSHA was concerned that the regulatory text of §1910.304(b)(3)(ii) may be read to include activities that are not “construction-like”. What federal OSHA considers “construction-like activities” applies only to the use of this term in subpart S – not all maintenance,

remodeling, or repair work is construction-like.

To clarify its intent as to the application of §1910.304(b)(3)(ii), federal OSHA revised the introductory text of §1910.304(b)(3)(ii) to read as follows:

“The following requirements apply to temporary wiring installations that are used during construction-like activities, including certain maintenance, remodeling, or repair activities, involving buildings, structures or equipment.”

In this current action, federal OSHA also clarifies the scope of §1910.304(b)(3)(ii) by explaining that §1910.304(b)(3)(ii) was taken from Section 2-2.4.2 of the 2000 edition of National Fire Protection Association’s (NFPA) 70E and that both are intended to apply to temporary wiring installations used during the performance of construction-like activities. Section 2-2.4.2 reads, in relevant part, as follows:

“2-2.4.2 Ground -Fault Protection for Personnel. Ground-fault protection for personnel for all temporary wiring installations shall be provided to comply with 2-2.4.2.1 or 2-2.4.2.2 below. This section shall apply only to temporary wiring installations used to supply temporary power to equipment used by personnel during construction, remodeling, maintenance, repair, or demolition of buildings, structures, equipment or similar activities.”

When determining whether the provisions of §1910.304(b)(3)(ii) apply, employers must determine whether a particular activity is “construction-like” in nature. Construction-like activities fall into two general categories: 1) activities that would be covered under federal OSHA’s construction standards but for the fact that they are specifically covered by other federal OSHA standards, which includes the vast majority of activities covered under subpart S; and 2) all other activities that do not qualify as construction but involve electrical hazards similar to those typically found in construction work. This category includes certain “maintenance, remodeling, or repair activities involving buildings, structures, or equipment” that pose electrical hazards similar to those typically found in construction work, e.g., damage to a cord set from rough use; exposure to wet, damp, or conductive conditions.

In response to questions about temporary wiring, federal OSHA stated that, for purposes of §1910.304(b)(3)(ii), it will consider as “temporary wiring” the use of more than one extension cord (connected in series or otherwise) to a permanent outlet, or the temporary connection of more than one piece of utilization equipment to an extension cord set that is connected to a permanent receptacle outlet. Federal OSHA notes that this temporary wiring would only be covered by §1910.304(b)(3)(ii) if it is used during “construction-like activities.”

Additionally, in response to questions concerning whether §1910.304(b)(3)(ii) applies to all receptacles or only those on branch circuits, federal OSHA decided that §1910.304(b)(3)(ii) does not apply to all receptacles but applies only to branch circuits, which are “the circuit conductors between the final overcurrent device (circuit breaker or fuse) protecting the circuit and the outlets”.

It also determined that §1910.304(b)(3)(ii)(A) requires ground-fault circuit interrupters (GFCI) for personnel protection and as electric equipment which must be approved by nationally recognized testing

laboratories (NRTL).

Federal OSHA determined that the standard requires GFCI protection for temporary circuits supplying lighting only when those circuits also supply receptacles.

*C. Ray Davenport*  
Commissioner

Attachments: **CHANGE I:** 72 FR 7135 (February 14, 2007) or refer to:  
[http://www.osha.gov/FedReg\\_ osha\\_pdf/FED20070214.pdf](http://www.osha.gov/FedReg_ osha_pdf/FED20070214.pdf)

**CHANGE II:** 73 FR 64202 (October 29, 2008) or refer to:  
[http://www.osha.gov/FedReg\\_ osha\\_pdf/FED20081029.pdf](http://www.osha.gov/FedReg_ osha_pdf/FED20081029.pdf)

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**Electrical Standard, Subpart S of Part 1910, §§1910.302 through 1910.308**

As adopted by the  
Safety and Health Codes Board

Date: June 26, 2007



VIRGINIA OCCUPATIONAL SAFETY AND HEALTH PROGRAM

VIRGINIA DEPARTMENT OF LABOR AND INDUSTRY

Effective date: December 15, 2007

16 VAC 25-90-1910.6, Incorporation by reference;  
16 VAC 25-90-1910.66, Powered Platforms, Manlifts, and Vehicle-Mounted Work Platforms;  
16 VAC 25-90-1910.302 – 16 VAC 25-90-1910.308, Electrical Standard, Subpart S of Part 1910; and  
16 VAC 25-90-1910.399, Definitions Applicable to this Subpart

When the regulations, as set forth in the revised final rule to the Electrical Standard, Subpart S of Part 1910, §§1910.302 through 1910.308, with related amended standards for the following: §§1910.6, 1910.66, and 1910.399, are applied to the Commissioner of the Department of Labor and Industry and/or to Virginia employers, the following federal terms shall be considered to read as below:

Federal Terms

VOSH Equivalent

29 CFR

VOSH Standard

Assistant Secretary

Commissioner of Labor and Industry

Agency

Department

August 23, 2007

December 15, 2007



**Electrical Standard, Subpart S of Part 1910, §§1910.303 and 1910.304; Final Rule;  
Clarifications and Correcting Amendments**

As adopted by the  
Safety and Health Codes Board

Date: April 16, 2009



VIRGINIA OCCUPATIONAL SAFETY AND HEALTH PROGRAM

VIRGINIA DEPARTMENT OF LABOR AND INDUSTRY

Effective date: July 15, 2009

16 VAC 25-90-1910.303, General  
16 VAC 25-90-1910.304, Wiring Design and Protection

When the regulations, as set forth in the clarifications and correcting amendments to §§1910.303 and 1910.304 of the final rule for the Electrical Standard, Subpart S of Part 1910, are applied to the Commissioner of the Department of Labor and Industry and/or to Virginia employers, the following federal terms shall be considered to read as below:

Federal Terms

VOSH Equivalent

29 CFR

VOSH Standard

Assistant Secretary

Commissioner of Labor and Industry

Agency

Department

October 29, 2008

July 15, 2009