



State of Wisconsin \ Department of Commerce

# **RULES in FINAL DRAFT FORM**

**Rule No.:** Chapter Comm 16

**Relating to:** Electrical Construction

**Clearinghouse Rule No.:** 05-010

The Department of Commerce proposes an order to repeal ss. Comm 16.155, Comm 16.22, Comm 16.395, Comm 16.42 (1), and Comm 16.49;  
to renumber s. Comm 16.45 (2);  
to amend ss. Comm 16.12, Comm 16.185 (title) and (intro.), Comm 16.20 (2) (b), Comm 16.23, Comm 16.27 (title) and (intro.), Comm 16.32, Comm 16.37, Comm 16.38, Comm 16.392, and Comm 16.42 (2);  
to repeal and re-create ss. Comm 16.20 (1), Comm 16.31 and Comm 16.48;  
and to create ss. Comm 16.257, Comm 16.327, Comm 16.436 and Comm 16.45 (2), relating to electrical construction and affecting small businesses.

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### Analysis of Proposed Rules

Statutory Authority: Sections 101.02(1), 101.63(1), 101.73(1) and 101.82, Stats.

Statutes Interpreted: Sections 101.63(1), 101.73(1), 101.82 and 101.865, Stats.

### **General Summary**

Chapter Comm 16, Electrical Code, establishes safety and health requirements for the installation of electrical wiring, communication systems and electrical equipment in places of employment, public buildings, dwellings and other premises such as carnivals, parking lots, mines, trenches, manufactured homes and recreational vehicles. The chapter incorporates by reference the National Fire Protection Association (NFPA) standard NFPA 70 – National Electrical Code (NEC). In addition, the chapter includes amendments that clarify or supplement the electrical standards contained in the NEC. Chapter Comm 16 also establishes rules for the electrical inspection of farms, public buildings and places of employment.

The proposed rules consist of an update of chapter Comm 16, including the incorporation by reference of the 2005 edition of the NEC. The consent of the Attorney General and the Revisor of Statutes has been obtained for the incorporation. The proposed rules do not contain any revisions to the current rules for the electrical inspection of farms, public buildings and places of employment. The majority of the proposed changes are administrative in nature and involve numbering and code location.

### **Detailed Summary**

The following is a summary of the major changes in the proposed rules. [The numbers in brackets indicate where the rule change can be found in the rule draft.]

1. Deleting several Wisconsin amendments to the NEC as a result of changes in the 2005 edition of the NEC. For example, because of changes in NEC 210.52 (E) of the 2005 NEC relating to the location of dwelling unit outdoor outlets, section Comm 16.22 is being deleted.

2. Clarifying the installation of nonmetallic sheathed cable when entering cabinets, boxes and conduit bodies. [Comm 16.31 and 16.32]

3. Deleting the NEC requirement for concealing nonmetallic sheathed cables in non-dwellings of Type III, IV or V construction within walls, floors or ceilings that provide a 15-minute finish rating. [Comm 16.327]

4. Adding 2 new rules to clarify the placement of a generator used as an emergency or legally required power source relative to the utility transformer. [Comm 16.45 (2) and 16.48]

## **Federal Comparison**

There are several existing federal regulations that relate to the installation of electrical wiring and equipment. Some of these regulations require compliance with various editions of the National Electrical Code (NEC). An Internet-based search of the *Code of Federal Regulations* (CFR) found the following existing federal regulations relating to the activities to be regulated by the rule.

Title 7 CFR Part 1755 – Telecommunications Standards and Specifications for Materials, Equipment and Construction. This regulation in the Department of Agriculture applies to telecommunication wiring and equipment, and requires compliance with the 1993 NEC.

Title 24 CFR Part 3280 – Manufactured Home Construction and Safety Standards. This regulation in the Department of Housing and Urban Development covers electrical systems in manufactured homes, and requires compliance with the 1993 NEC.

Title 29 CFR Part 1910 – Occupational Safety and Health Standards. Subpart S of this regulation in the Department of Labor contains detailed electrical safety requirements that are necessary for the practical safeguarding of employees in their workplaces.

Title 29 CFR Part 1926 – Safety and Health Regulations for Construction. Subpart K of this regulation in the Department of Labor contains detailed electrical safety requirements that are necessary for the practical safeguarding of employees involved in construction work.

Title 30 CFR Part 57 – Safety and Health Standards – Underground Metal and Nonmetal Mines. Subpart K of this regulation in the Department of Labor contains specific electrical safety requirements for the protection of employees working in underground metal and nonmetal mines.

Title 30 CFR Part 75 – Mandatory Safety and Health Standards – Underground Coal Mines. Subpart F of this regulation in the Department of Labor contains specific electrical safety requirements for the protection of employees working in underground coal mines.

An Internet-based search of the 2003, 2004 and 2005 issues of the *Federal Register* found the following proposed regulations relating to the installation of electrical wiring and equipment.

April 5, 2004 Register, 29 CFR Part 1910. The Occupational Safety and Health Administration in the Department of Labor proposed to revise the general industry electrical installation standard found in Subpart S of 29 CFR Part 1910. The requirements in the revised standard draw heavily from the 2002 edition of the NEC.

June 25, 2004 Register, 30 CFR Part 75. The Mine Safety and Health Administration in the Department of Labor proposed to allow the use of low- and medium-voltage diesel-powered electrical generators as an alternative means of powering electrical equipment.

July 16, 2004 Register, 30 CFR Part 75. The Mine Safety and Health Administration in the Department of Labor proposed to establish new electrical safety standards for the installation, use and maintenance of high-voltage continuous mining machines used in underground coal mines.

December 1, 2004 Register, 24 CFR Part 3280. The Department of Housing and Urban Development proposed amendments to the Construction and Safety Standards for manufactured homes by adopting recommendations made to HUD by the Manufactured Housing Consensus Committee. The electrical systems amendments are consistent with the 1996 NEC.

### State Comparison

An Internet-based search of adjacent states' rules found the following regulations that include requirements relating to electrical construction.

- Illinois does not administer a state electrical code.
- The Iowa Department of Public Safety administers the Iowa Building Code, which adopts the 1996 edition of the National Electrical Code with no amendments.
- The Michigan Department of Labor and Economic Growth administers the Michigan Construction Code, which adopts the 2002 edition of the National Electrical Code with amendments.
- The Minnesota Department of Administration, Building Codes and Standards Division, administers the Minnesota State Building Code, which adopts the 2002 edition of the National Electrical Code with no amendments.

### Advisory Council

The proposed rules have been developed with the assistance of the Electrical Code Advisory Council. The members of that citizen advisory council are as follows:

<u>Name</u>	<u>Representing</u>
Shannon Clark	Wisconsin Electric Cooperative Association
Mark Cook	Wisconsin Public Service Commission
Terry Fameree	International Association of Electrical Inspectors
Robert A. Fass	Wisconsin Utilities Association
David Hansen	Dept of Agriculture, Trade and Consumer Protection
Ronald L. Jahnke	NECA, Wisconsin Chapter
Ronald Janikowski	International Association of Electrical Inspectors
Norbert Jarzynski	Wisconsin State AFL-CIO
Charles L. Johansen	Wisconsin Builders Association
Richard Lynes	Associated Builders and Contractors of Wisconsin
Ronald E. Maassen	NECA, Milwaukee Chapter

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SECTION 1. Comm 16.12 is amended to read:

**Comm 16.12 Adoption of standards by reference.** The National Electrical Code, NEC–~~2002~~ 2005, subject to the changes, additions or omissions specified in subch. III, is hereby incorporated by reference into this chapter.

SECTION 2. Comm 16.155 and Article 80 (title) are repealed.

SECTION 3. Comm 16.185 (title) and (intro.) are amended to read:

**Comm 16.185 (title) ~~Multiwire branch circuits~~ Identification for branch circuits** [NEC ~~210.4~~ 210.5]. This is a department informational note to be used under NEC ~~210.4 (D)~~ 210.5 (C):

SECTION 3G. Comm 16.20 (1) is repealed and recreated to read:

**Comm 16.20 (1) DWELLING UNITS** [NEC 210.8 (A)]. Substitute the following wording for NEC 210.8 (A) (7):

Laundry, utility, bedroom and wet bar sinks, where the receptacles are installed within 6 feet of the outside edge of the sink.

SECTION 3R. Comm 16.20 (2) (b) is amended to read:

**Comm 16.20 (2) (b) ~~Kitchens~~ Commercial and industrial kitchens**, where the receptacles are installed to serve the countertop surfaces. For the purposes of this paragraph, a kitchen is an area with a sink and permanent facilities for food preparation and cooking.

SECTION 4. Comm 16.22 is repealed.

SECTION 5. Comm 16.23 is amended to read:

**Comm 16.23 Branch-circuit, feeder, and service calculations [NEC 220]. (1)** ~~COMPUTATION OF BRANCH CIRCUIT LOADS [NEC 220.3]~~ GENERAL [NEC 220.10]. Substitute the following wording for NEC ~~220.3 (intro.)~~ 220.10:

Branch-circuit loads shall be calculated as shown in NEC ~~220.3 (A) through (C)~~ 220.12, 220.14 and 220.16, or under the supervision of a Wisconsin professional engineer, architect or designer of electrical systems, circuit load calculations may use a lower unit load than identified in Table ~~220.3 (A)~~ 220.12 when energy codes restrict lighting loads to an amount lower than the table values.

(2) GENERAL [NEC ~~220.10~~ 220.40]. This is a department exception in addition to the requirements in NEC ~~220.10~~ 220.40:

Exception: Under the supervision of a Wisconsin professional engineer, architect or designer of electrical systems, the feeder or service size may be computed using diversity factors or historical data of a similar type of building, other than one- and 2-family dwelling units.

[**Note to Revisor:** Remove par. (c) under s. Comm 16.25 (5); it was printed in error in the April 2003 Register.]

SECTION 5G. Comm 16.257 is created to read:

**Comm 16.257 Grounding electrode system**[NEC **250.50**]. Substitute the following wording for NEC 250.50 and Exception:

If available on the premises at each building or structure served, each item in NEC 250.52 (A)(1) through (A)(6) shall be bonded together to form the grounding electrode system. Where none of these electrodes are available, one or more of the electrodes specified in NEC 250.52 (A)(4) through (A)(7) shall be installed and used.

SECTION 5R. Comm 16.27 (title) and (intro.) are amended to read:

**Comm 16.27 (title) ~~Services~~ Bonding for Other Systems** [NEC ~~250.92~~ 250.94]. This is a department rule in addition to the requirements of NEC ~~250.92~~ (B) 250.94:

SECTION 6. Comm 16.31 is repealed and recreated to read:

**Comm 16.31 Cabinets, cutout boxes, and meter socket enclosures** [NEC **312.5**]. (1) CABLES [NEC 312.5 (C)]. Substitute the following wording for NEC 312.5 (C) Exception (intro.):

Exception: Cables with entirely nonmetallic sheaths shall be permitted to enter an enclosure through one or more nonflexible raceways of not less than 12 inches and not more than 10 feet in length, provided all of the following conditions are met:

(2) OMISSION [NEC 312.5 (C) EXCEPTION]. NEC 312.5 (C) Exception par. (b) does not apply in Wisconsin.

(3) FITTING [NEC 312.5 (C) EXCEPTION]. Substitute the following wording for NEC 312.5 (C) Exception par. (c):

A fitting is provided on each end of the raceway to protect the cable(s) from abrasion.

SECTION 6M. Comm 16.32 is amended to read:

**Comm 16.32 Conductors entering boxes, conduit bodies, or fittings [NEC 314.17].**

This is a department exception in addition to the requirements of NEC 314.17 (B) and (C):

Exception: Nonmetallic sheathed cable shall not be required to be secured to the box or cabinet ~~where it is enclosed within a raceway for mechanical protection providing the cable is secured within 12 inches of where it leaves the raceway. The raceway shall be at least 12 inches in length and sealed to prevent entrance of foreign materials.~~ conduit body where it is installed in accordance with the wiring method specified in s. Comm 16.31.

SECTION 7. Comm 16.327 is created to read:

**ARTICLE 334  
NONMETALLIC-SHEATHED CABLE: TYPES NM, NMC, AND NMS**

**Comm 16.327 Uses permitted [NEC 334.10].** Substitute the following wording for NEC 334.10 (intro.) (3):

Other structures permitted to be of Types III, IV and V construction except as prohibited in NEC 334.12.

SECTION 8. Comm 16.37 is amended to read:

**Comm 16.37 Uses not permitted [NEC 400.8].** This is a department exception in addition to the exception in NEC 400.8 (4):

Exception No. 2: Flexible cords and cables permitted by NEC 400.7 (A) that are connected to sources other than busways shall be permitted to be attached to adequately supported equipment or building surfaces provided the type of cord or cable, the attachment to the building and equipment, and the support comply with the provisions of NEC ~~368.8 (B)~~ 368.56 (B).

SECTION 9. Comm 16.38 is amended to read:

**Comm 16.38 Location [NEC 430.102].** Substitute the following wording for NEC 430.102 (B) and Exception:

A separate disconnecting means shall be located in sight from the motor location and the driven machinery location.

Exception: A disconnecting means, in addition to the controller disconnecting means as required in accordance with NEC 430.102 (A), shall not be required for the motor where the disconnecting means for the controller is individually capable of being locked in the open

position. The provision for locking or adding a lock to the disconnecting means shall be ~~permanently~~ installed on or at the switch or circuit breaker used as the disconnecting means and shall remain in place with or without the lock installed.

SECTION 10. Comm 16.392 is amended to read:

**Comm 16.392 Classifications of locations [NEC 511.3].** Section NEC 511.3 ~~(B)-(4)~~ ~~Exception (A) (5)~~ does not apply in Wisconsin.

SECTION 11. Comm 16.395 and Article 514 (title) are repealed.

SECTION 12. Comm 16.42 (1) is repealed.

SECTION 13. Comm 16.42 (2) is amended to read:

**Comm 16.42 (2) EQUIPOTENTIAL PLANES AND BONDING OF EQUIPOTENTIAL PLANES [NEC 547.10].** Section NEC 547.10 (A) ~~and (B) do~~ does not apply in Wisconsin.

SECTION 13M. Comm 16.436 is created to read:

**Comm 16.436 Branch circuits for other utilization equipment [NEC 620.25].** This is a department informational note to be used under NEC 620.25:

**Note:** See NEC 620.53, 620.54 and 620.55 for additional requirements.

SECTION 14. Comm 16.45 (2) is renumbered (1).

SECTION 15. Comm 16.45 (2) is created to read:

**Comm 16.45 (2) GENERAL REQUIREMENTS [NEC 700.12].** This is a department rule in addition to the requirements in NEC 700.12 (intro.):

The enclosure of the alternate source of power located outdoors for emergency systems shall be located at least 10 feet from a combustible wall and at least 20 feet from an outdoor electrical transformer or normal power distribution equipment. These dimensions may be reduced by one-half where a noncombustible barrier is installed that extends at least 3 feet beyond each side of the transformer. The height of the barrier shall be at least one foot above the top of the transformer or alternate power source, whichever is higher.



SECTION 16. Comm 16.48 is repealed and recreated to read:

**Comm 16.48 Legally required standby systems [NEC 701.11]. (1) ADDITION.** This is a department rule in addition to the requirements in NEC 701.11 (intro.):

The enclosure of the alternate source of power located outdoors for legally required standby systems shall be located at least 10 feet from a combustibile wall and at least 20 feet from an outdoor electrical transformer or normal power distribution equipment. These dimensions may be reduced by one-half where a noncombustible barrier is installed that extends at least 3 feet beyond each side of the transformer. The height of the barrier shall be at least one foot above the top of the transformer or alternate power source, whichever is higher.

**(2) DELETION.** NEC 701.11 (B) (3) does not apply in Wisconsin.

**Note:** See chs. Comm 61 to 65 for further requirements.

SECTION 17. Comm 16.49 is repealed.

**END**

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**EFFECTIVE DATE**

Pursuant to s. 227.22 (2)(intro.), Stats., these rules shall take effect on the first day of the month following publication in the Wisconsin Administrative Register.

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