

**Clearinghouse Rule 13-042**

STATE OF WISCONSIN  
DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES

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IN THE MATTER OF RULE-MAKING :  
PROCEEDINGS BEFORE THE : NOTICE OF PUBLIC HEARING  
DEPARTMENT OF SAFETY AND :  
PROFESSIONAL SERVICES :  
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NOTICE IS HEREBY GIVEN that pursuant to authority vested in the Department of Safety and Professional Services in §101.82 (1), Wis. Stats., and interpreting §101.82 (1), Wis. Stats., the Department of Safety and Professional Services will hold a public hearing at the time and place indicated below to consider an order to repeal SPS 316.210 (a) and (c), SPS 316.210 (5), and SPS 316.225 (1);  
to renumber SPS 316.210 (2) (b), SPS 316.210 (6), SPS 316.225 (2), (3) (b), (4) and (5), and SPS 315.230 (5);  
to renumber and amend SPS 316.225 (3) (a), SPS 316.230 (3); and SPS 316.230 (4);  
to amend SPS 316.004 (1), SPS 316.005 Note [2], SPS 316.009 Note, SPS 316.010, SPS 316.022, SPS 316.090 (title), SPS 316.110, SPS 316.220 (1), SPS 316.310 (title) and (intro.), SPS 316.314 (title), SPS 316.334 (2) (title), SPS 316.400 (title), SPS 316.450 (title) and (1), SPS 316.511 (title), SPS 316.620 (title), SPS 316.675, SPS 316.680 (title), and SPS 316.700 (1) (intro.) and (3);  
to repeal and recreate SPS 316.007, SPS 316.210 (4) SPS 316.250 (1), and SPS 316.406,  
and to create SPS 316.023 Note, SPS 316.210 (6), SPS 316.300 (1) (a) 5, and SPS 316.547 relating to electrical construction.

**Hearing Date, Time and Location**

**Date:** June 27, 2013  
**Time:** 10:00 a.m.  
**Location:** 1400 East Washington Avenue  
Room 121B  
Madison, Wisconsin

**APPEARANCES AT THE HEARING:**

Interested persons are invited to present information at the hearing. Persons appearing may make an oral presentation but are urged to submit facts, opinions and

argument in writing as well. Facts, opinions and argument may also be submitted in writing without a personal appearance by mail addressed to the Department of Safety and Professional Services, Division of Policy Development, P.O. Box 8935, Madison, Wisconsin 53708 or emailed to jim.quast@wisconsin.gov.

Analysis prepared by the Department of Safety and Professional Services.

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## ANALYSIS

### **1. Statutes interpreted:**

Section 101.82 (1), Stats.

### **2. Statutory authority:**

Sections 101.02 (1) and 101.82 (1), Stats.

### **3. Explanation of agency authority:**

Section 101.82 (1), Stats., grants the Department of Safety and Professional Services general authority for protecting the health, safety and welfare of the public by establishing reasonable and effective safety standards for the installation, repair and maintenance of electrical wiring. In addition, the statutes read, "Where feasible, the rules shall reflect nationally recognized standards."

### **4. Related statute or rule:**

- Sections 101.63 (1) and 101.73 (1), Stats.
- Chapters SPS 361 to 366, Wisconsin Commercial Building Code
- Chapters SPS 320 to 325 of the Uniform Dwelling Code
- Chapter PSC 114, Public Service Commission.

### **5. Plain language analysis:**

The primary revisions to chapter SPS 316 are to adopt the most current edition of the *National Electrical Code*® (*NEC*®). In addition to bringing the state electrical code up to date with modern technology, the proposed revisions clarify or supplement the

electrical standards contained in the 2011 edition of the *NEC*<sup>®</sup>. The proposed rules contain a number of modifications to the technical requirements within these standards, reorganization of current requirements and editorial changes. The following is a summary of the major proposed changes to this chapter:

- a. Adopt by reference the most current edition of the *NEC*<sup>®</sup> and include correct cross-references to this standard. [SPS 316.007]
- b. Exclude the *NEC*<sup>®</sup> requirements for arc-fault circuit-interrupter (AFCI) protection on replacement of receptacles because of the *NEC*<sup>®</sup>'s delayed effective date (January 1, 2014). Wisconsin will wait a code cycle for product availability and for the resolution of issues that the new AFCI requirements will create. [SPS 316.210 (4) and SPS 316.406]
- c. Amend or repeal several Wisconsin modifications that reference the *NEC*<sup>®</sup> because of changes in the 2011 edition.

#### **6. Summary of, and comparison with, existing or proposed federal regulations:**

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 *NEC*<sup>®</sup>. 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 this rule:

- Title 29 CFR, Part 1910 – Occupational Safety and Health Standards. Subpart S of this regulation in the Department of Labor contains design safety standards for electrical systems, safety-related work practices and maintenance requirements and safety requirements for special electrical equipment to safeguard employees in their workplaces. Subpart R contains industrial lighting requirements and safe practices relating to lockouts and emergency lighting requirements for the safety of employees working in special industries.
- Title 29 CFR, Part 1926 –Safety and Health Regulations for Construction. Subpart K of this regulation in the Department of Labor contains installation safety requirements, safety-related practices, safety-related maintenance and environmental considerations and safety requirements for special equipment necessary to safeguard employees involved in construction work.
- Title 30 CFR, Part 75 – Mandatory Safety Standards–Underground Coal Mines. Subpart F of this regulation in the Department of Labor contains electrical safety requirements for the protection of employees working in underground coal mines.
- 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 24 CFR, Part 3280—Manufactured Home Construction and Safety Standards. Subpart I of this regulation in the Department of Housing and Urban Development covers electrical systems in manufactured homes, and requires compliance with the 2005 *NEC*<sup>®</sup>.
- Title 7 CFR, Part 1755 – Telecommunications Standards and Specifications for Materials, Equipment and Construction. This regulation in the Department of Agriculture applies to telecommunications wiring and equipment, and requires compliance with the *NEC*<sup>®</sup>.

The Occupational Safety and Health Administration (OSHA) revised the general industry electrical installation standard found in Subpart S of Title 29 CFR, Part 1910, effective on August 13, 2007. The Agency 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 National Fire Protection Association's (NFPA) Electrical Safety Requirements for Employee Workplaces (NFPA 70E), and the *NEC*<sup>®</sup>, are reasonably necessary to provide protection from these hazards. This revised standard focuses on safety in the design and installation of electric equipment in the workplace. In the October 29, 2008, *Federal Register*, the Agency revised the regulatory text to clarify OSHA's scope and corrected some typographical errors.

## 7. Comparison with rules in adjacent states:

An Internet-based search found that all adjacent states except Illinois adopt by reference various editions of the *NEC*<sup>®</sup>.

- **Illinois** does not administer a state electrical code.
- The **Iowa** Department of Public Safety administers the Iowa Building Code that adopts the 2011 edition of the *NEC*<sup>®</sup> with modifications.
- The **Michigan** Department of Labor and Economic Growth administers the Michigan Construction Code that adopts by reference the 2008 edition of the *NEC*<sup>®</sup> with modifications.
- The **Minnesota** Department of Labor and Industry, Building Codes and Standards Division, administers the Minnesota State Building Code that incorporates by reference the 2011 edition of the *NEC*<sup>®</sup>.

## 8. Summary of factual data and analytical methodologies.

The primary methodology for updating the Wisconsin Electrical Code, chapter SPS 316 has been a review and assessment of the latest edition of the national technical standards that serve as the basis for Wisconsin code. Staff compared the changes in the 2011 edition of the *NEC*<sup>®</sup> to the 2008 edition currently adopted under SPS 316 and solicited code change proposals.

The department's review and assessment process involved the participation of the Electrical Code Advisory Council. The members of that Council represent the many stakeholders involved in the electrical industry including utility representatives, inspectors, labor and building contractors. The Council reviewed and discussed 37 code change proposals at its meetings.

The department believes the national model codes reflect current societal values with respect to safeguarding people and property from hazards arising from the use of electricity.

The 2011 edition of *NFPA 70*<sup>®</sup>, *NEC*<sup>®</sup> is the most adopted code in the United States. Part of the National Fire Codes series published by the National Fire Protection Association (NFPA), the 2011 *NEC*<sup>®</sup> sets the benchmark for safe electrical design, installation, and inspection. The *NEC*<sup>®</sup> is developed by NFPA's committee on the National Electrical Code, which consists of 20 code-making panels and a technical correlating committee. The *NEC*<sup>®</sup> is approved as an American National Standard by the American National Standards Institute (ANSI). First published in 1897, the *NEC*<sup>®</sup> is updated and published every 3 years. Most states adopt the most recent edition within a year of its publication to safeguard people and property.

More information on the development of this national model code may be obtained from the NFPA web site at [www.nfpa.org](http://www.nfpa.org) or from the *NEC*<sup>®</sup> web site at [www.necplus.org](http://www.necplus.org).

The Department has ensured the accuracy, integrity, objectivity and consistency of data were used in preparing the proposed rule and related analysis

**9. Analysis and supporting documents used to determine effect on small business or in preparation of economic impact analysis:**

The department used the Electrical Code Advisory Council to gather and analyze information on potential impacts in complying with both the technical and administrative requirements of the *NEC*<sup>®</sup>. Many small businesses belong to the industry associations that sit on the advisory council. A responsibility of council members is to bring forth concerns that their respective organizations may have with the requirements including economic impact.

The proposed rule changes also were shared with the Commercial Buildings Code Council, Uniform Dwelling Code Council and Multifamily Dwelling Code Council.

In addition to posting rule development and council activities on the department's web site, the department offers an Email subscription service that is available to all small businesses and concerned interests. This service provides Email notification of council meetings, meeting, agendas and council meeting progress reports so interested parties can follow proposed code changes.

Adopting the most current edition of the *NEC*<sup>®</sup> will not impose a significant impact on small businesses involved in the inspection, maintenance, service and installation of electrical wiring.

#### **10. Fiscal estimate and economic impact analysis:**

The Fiscal estimate and economic impact analysis is attached.

#### **11. Initial Regulatory Flexibility Analysis or Summary:**

The proposed rules update the Electrical Code, ch. SPS 316, to reference the 2011 edition of the *National Electrical Code*<sup>®</sup>. Currently, the Electrical Code references the 2008 edition.

No reporting, bookkeeping and other procedures required for compliance with the rules.

No professional skills are required for compliance with the rules above those needed under the current rules.

#### **12. Effect on small business:**

These proposed rules do not have an economic impact on small businesses, as defined in s. 227.114 (1), Stats. The Department's Regulatory Review Coordinator may be contacted by email at [Greg.Gasper@wisconsin.gov](mailto:Greg.Gasper@wisconsin.gov), or by calling (608) 266-8608.

#### **13. Environmental Assessment**

The Department has considered the environmental impact of the proposed rules. In accordance with chapter SPS 301, the proposed rules are a Type III action. A Type III action normally does not have the potential to cause significant environmental effects and normally does not involve unresolved conflicts in the use of available resources. The Department has reviewed these rules and finds no reason to believe that any

unusual conditions exist. At this time, the Department has issued this notice to serve as a finding of no significant impact

**14. Agency contact person:**

James Quast, Program Manager, jim.quast@wisconsin.gov, (608) 266-9292 or by telecommunications relay services at 711.

**15. Place where comments are to be submitted and deadline for submission:**

Comments may be submitted to James Quast, Program Manager, Department of Safety and Professional Services, Division of Policy Development, 1400 East Washington Avenue, Room 151, P.O. Box 8935, Madison, WI 53708-8935, or by email to jim.quast@wisconsin.gov. Comments must be received on or before July 5, 2013 to be included in the record of rule-making proceedings.

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[Note to Reader: The numbering of the rule references reflects and coordinates with the numbering changes occurring under another rule-making package, CR09-029.]

SECTION 1. SPS 316.004 (1) is amended to read:

**SPS 316.004 (1) DEPARTMENT AUTHORITY.** ~~The~~ Under s. 101.02 (1), Stats., the department shall have the authority and responsibility for interpreting reserves the right to interpret the requirements in this chapter and the National Electrical Code, and granting special permission as specified in this chapter. A formal interpretation of this chapter shall remain in effect until rescinded or changed or until the edition of the National Electrical Code is changed in s. SPS 316.014 in all adopted codes and standards.

SECTION 2. SPS 316.005 Note [2] is amended to read:

**SPS 316.005 Note:** ~~Form SBD-9890 is~~ The Department forms required in this chapter are available for a nominal fee at telephone 800-DOC-SALES or Contact Through Relay or at [docsales@doa.state.wi.us](mailto:docsales@doa.state.wi.us), or at no charge from the department at the Safety and Buildings Division, P.O. Box 2509, Madison WI 53701, telephone 608/266-1818 or 608/264-8777 (TTY), or at the Safety and Buildings Department's web site: [www.SPSSerce.state.wi.us](http://www.SPSSerce.state.wi.us) <http://dsps.wi.gov> through links to Industry Services Division forms.

SECTION 3. Wherever the title "National Electrical Code" occurs in chapter SPS 316, insert the registered trademark symbol after "Code" and italicize the entire title: *National Electrical Code*<sup>®</sup>.

SECTION 4. SPS 316.007 is repealed and recreated to read:

**SPS 316.007 Adoption of standards by reference. (1) PRIMARY STANDARDS.** The following standard is hereby incorporated by reference into this chapter, subject to the modifications specified in this chapter:

(a) National Fire Protection Association<sup>®</sup> (NFPA), One Batterymarch Park, Quincy, MA 023169-7471, telephone 800-344-3555, [www.nfpa.org](http://www.nfpa.org): *NFPA 70<sup>®</sup> National Electrical Code<sup>®</sup>, (NEC<sup>®</sup>) – 2011.*

**Note:** Copies of the standard are on file in the offices of the Department and the Legislative Reference Bureau. Copies for personal use may be obtained, at a cost, from the organization listed.

(b) If a requirement in the standards adopted in par. (a) contains a cross-reference to another requirement modified by this chapter, the modification shall apply to the cross-reference unless specified otherwise in this chapter.

(2) SECONDARY REFERENCES. Any codes or standards referenced in the standards adopted in sub. (1) (a) shall apply to the prescribed extent of each such reference, except as modified by this chapter.

(3) ALTERNATE STANDARDS. Any alternate standard that is equivalent to or more stringent than a standard incorporated by reference or otherwise referenced under this chapter may be used in lieu of the incorporated or referenced standard if the alternate standard is accepted in writing by the department.

SECTION 5. SPS 316.022 is amended to read:

**SPS 316.022 (1) MATERIALS.** Materials, equipment and products ~~which~~ that do not comply with the requirements of this chapter shall not be used unless approved in writing by the department. Approval of materials, equipment and products shall be based on sufficient data, tests and other evidence that prove the material, equipment or product meets the intent of the requirements of this chapter. Data, tests and other evidence shall be provided by a qualified independent third party.

**Note:** Examples of a qualified independent third party include a nationally recognized testing laboratory and a professional engineer.

(2) METHODS OF INSTALLATION. Methods of installation ~~which~~ that do not comply with the regulations of this chapter shall not be used unless approved by the department.

(3) NEW PRODUCTS, CONSTRUCTIONS OR MATERIALS. The incorporated ~~National Electrical Code~~ National Electrical Code<sup>®</sup> may require new products, constructions or materials ~~which~~ that may not be available at the time this chapter is adopted. In such event, the department may permit the use of the products, constructions or materials which comply with a previous edition of the ~~National Electrical Code~~ National Electrical Code<sup>®</sup>.

SECTION 6. SPS 316.023 Note is created to read:

**SPS 316.023 Note:** Under s. 101.18, Stats., the Department is responsible for establishing "...reasonable standards, rules or regulations for the erection, construction, repair and maintenance of electric fences as shall render them safe."

SECTION 7. SPS 316.090 (title) is amended to read:

**SPS 316.090 ~~Purpose, scope and enforcement~~ Introduction.**

SECTION 8. SPS 316.110 is amended to read:

**SPS 316.110 Requirements for electrical installation. (1) INSTALLATION AND USE.** Substitute the following wording for the requirements in NEC 110.3 (B): Listed or labeled equipment shall be installed or used, or both, in accordance with any instructions included in the listing or labeling, provided the instructions, listing or labeling do not conflict with this chapter.

SECTION 9. SPS 316.210 (2) (a) and (c) are repealed.

SECTION 10. SPS. 316.210 (2) (b) is renumbered SPS 316.210 (2).

SECTION 11. SPS 316.210 (4) is repealed and recreated to read:

**SPS 316.210 (4) Branch circuit extensions or modifications – dwelling units.** The requirements in NEC 210.12 (B) are not included as part of this chapter.

SECTION 12. SPS 316.210 (5) is repealed.

SECTION 13. SPS 316.210 (6) is renumbered SPS 316.210 (5).

SECTION 14. SPS 316.210 (6) is created to read:

**SPS 316.210 (6) COUNTERTOP RECEPTACLES.** The requirements in NEC 210.52 (A) (4) are not included as part of this chapter.

SECTION 15. SPS 316.220 (1) is repealed and recreated to read:

**SPS 316.220 (1) GENERAL.** This is a department exception to the requirements in NEC 220.10: Circuit load calculations may use unit load values lower than those identified in NEC Table 220.12 for lighting loads calculated using the maximum electrical energy conservation values specified under ch. SPS 363 for public buildings and places of employment.

SECTION 16. SPS 316.225 (1) is repealed.

SECTION 17. SPS 316.225 (2) to (5) are renumbered SPS 316.225 (1) to (4) and as renumbered SPS 316.225 (2) (a) is amended to read:

**SPS 316.225 (2)** (a) For the purpose of this section, multiple feeders that are supplied from the same distribution point, ~~rated~~ having a total rating of 300 amperes or greater more, and that supply not more than 6 disconnecting means grouped at the same location ~~are~~ shall be considered as one supply.

SECTION 18. SPS 316.230 (3) is renumbered SPS 316.230 (3) (b) and as renumbered SPS 316.230 (3) (b) (title) is amended to read:

**SPS 316.230 (3) (b)** ~~LOCATION~~ Location.

SECTION 19. SPS 316.230 (4) is renumbered SPS 316.230 (3) (a) and as renumbered is amended to read:

**SPS 316.230 (3) SERVICE EQUIPMENT – DISCONNECTING MEANS.** (a) ~~GENERAL~~ General. This is a department rule in addition to the requirements in NEC 230.70: Disconnecting means shall be provided to disconnect the utility wiring from the premises wiring at any point where utility wiring terminates and premises wiring extends overhead or underground to more than one building or structure.

SECTION 20. SPS 316.230 (5) is renumbered SPS 316.230 (4).

SECTION 21. SPS 316.250 is repealed and recreated to read:

**SPS 316.250 Grounding and bonding. (1) SUPPLEMENTAL ELECTRODE REQUIRED.** The exception in NEC 250.53 (A) (2) is not included as part of this chapter.

**(2) SUPPLEMENTAL ELECTRODE.** This is a department rule in addition to the requirements in NEC 250.53 (3): A single electrode consisting of a rod, pipe or plate shall be augmented by one additional electrode of any of the types in NEC 250.52 (A) (4) to (A) (8).

SECTION 22. SPS 316.300 (1) (a) 5. is created to read:

**SPS 316.300 (1) (a) 5.** Where the wiring enclosure for the alarm and pump circuit is located outside the pump chamber, any openings into the pump chamber for circuit wiring shall be sealed or plugged to prevent the passage of gas or vapor into the wiring enclosure.

SECTION 23. SPS 316.310 (title) and (intro.) are amended to read:

**SPS 316.310 ~~More than three current-carrying conductors in a raceway or cable~~ Conductors for general wiring.** This is a department ~~exception rule~~ in addition to the ~~exceptions~~ requirements specified in ~~NEC 310.15 (B) (2) (a): Exception No. 6: NEC 310.15 (B) (3) (a)~~: The derating factors shown in NEC Table 310.15 (B) (2) (a) do not apply to branch circuits supplying an individual dwelling unit except under the following conditions:

SECTION 24. SPS 316.314 (title) is amended to read:

**SPS 316.314 Outlet, device, pull and junction boxes; conduit bodies; fittings; and ~~manhole~~ handhole enclosures.**

SECTION 25. SPS 316.334 (2) (title) is amended to read:

**SPS 316.334 (2) ~~DELETION~~ TYPES NM, NMC AND NMS.**

SECTION 26. SPS 316.400 (title) is amended to read:

**SPS 316.400 ~~Uses not permitted~~ Flexible cords and cables.**

SECTION 27. SPS 316.406 is repealed and recreated to read:

**SPS 316.406 Receptacles, cord connectors and attachment plugs (caps).** The requirements in NEC 406.4 (D) (4) are not included as part of this chapter.

SECTION 28. SPS 316.450 (title) and (1) are amended to read:

**SPS 316.450 Transformers and transformer vaults (including secondary ties).** (1) OVERCURRENT PROTECTION. This is a department rule in addition to the requirements in NEC Table 450.3 (A) Note 3: The qualified person ~~can~~ shall be either an employee at that location or an employee contracted for this purpose who is readily available.

SECTION 29. SPS 316.511 (title) is amended to read:

**SPS 316.511 ~~Classifications of locations~~ Commercial garages, repair and storage.**

SECTION 30. SPS 316.547 is created to read:

**SPS 316.547 Agricultural buildings.** This is a department exception to the requirements in NEC 547.5 (G): Exception: Ground-fault circuit-interrupter protection is not required for a single receptacle providing power for an electric fence controller used for livestock containment where an accessible ground-fault circuit-interrupter protected receptacle is located within 900 mm (3 ft) of the non-GFCI protected receptacle.

SECTION 31. SPS 316.620 (title) is amended to read:

**SPS 316.620 Branch circuits for other utilization equipment Elevators, dumbwaiters, escalators, moving walks, platform lifts and stairway chairlifts.**

SECTION 32. SPS 316.675 is amended to read:

**SPS 316.675 Disconnecting means Electrically driven or controlled irrigation machines.** This is a department rule in addition to the requirements in NEC 675.8: A service disconnecting means with overcurrent protection shall be provided at the service point in accordance with NEC 230 subchapter VI.

SECTION 33. SPS 316.680 (title) is amended to read:

**SPS 316.680 Equipotential bonding Swimming pools, fountains and similar installations.**

SECTION 34. SPS 316.700 (1) (intro.) and (3) are amended to read:

**SPS 316.700 Emergency systems. (1) WIRING, EMERGENCY SYSTEM.** This is a department rule in addition to the requirements in NEC ~~700.9 (B)~~ 700.10 (B):

**(3) ~~DELETION~~ GENERAL REQUIREMENTS, DUAL SUPPLIES.** The requirements ~~specified~~ in NEC 700.12 (B) (3) are not included as part of this chapter.

SECTION 35. 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.

**END**

## COPIES OF RULE

Copies of this proposed rule are available upon request to James Quast, Program Manager, Department of Safety and Professional Services, Division of Board Services, 1400 East Washington Avenue, P.O. Box 8935, Madison, Wisconsin 53708, or by email at [jim.quast@wisconsin.gov](mailto:jim.quast@wisconsin.gov) or on the Department's website at <http://165.189.64.111/Default.aspx?Page=44e541e8-abdd-49da-8fde-046713617e9e>.