



WISCONSIN LEGISLATIVE COUNCIL RULES CLEARINGHOUSE

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CLEARINGHOUSE REPORT TO AGENCY

[THIS REPORT HAS BEEN PREPARED PURSUANT TO S. 227.15, STATS. THIS IS A REPORT ON A RULE AS ORIGINALLY PROPOSED BY THE AGENCY; THE REPORT MAY NOT REFLECT THE FINAL CONTENT OF THE RULE IN FINAL DRAFT FORM AS IT WILL BE SUBMITTED TO THE LEGISLATURE. THIS REPORT CONSTITUTES A REVIEW OF, BUT NOT APPROVAL OR DISAPPROVAL OF, THE SUBSTANTIVE CONTENT AND TECHNICAL ACCURACY OF THE RULE.]

CLEARINGHOUSE RULE 02-072

AN ORDER to repeal Comm 16.12 (1), 16.295, 16.35, 16.41, 16.437 and 16.44; to renumber Comm 16.23; to renumber and amend Comm 16.12 (2), 16.24 (1) (b) and (2) (c), 16.34, 16.355 and 16.36; to amend Comm 16.02 (2) (e), 16.065, 16.17 (2) (a), 16.25 (1) (a) (intro.), (6) and (7) (title), (intro.) and (b), 16.26 (title), (intro.) and (2), 16.30 (1), 16.33, 16.395 and 16.42 (1); to repeal and recreate Comm 16.03 (3), 16.11 (1), 16.20 and 16.42 (2); and to create Comm 16.03 (4), 16.155, 16.215, 16.23, 16.275, 16.294, 16.37, 16.38, 16.39 (1), 16.392, 16.438, 16.49 and 16.52, relating to electrical construction.

Submitted by **DEPARTMENT OF COMMERCE**

05-29-2002 RECEIVED BY LEGISLATIVE COUNCIL.

06-19-2002 REPORT SENT TO AGENCY.

RNS:NZ

LEGISLATIVE COUNCIL RULES CLEARINGHOUSE REPORT

This rule has been reviewed by the Rules Clearinghouse. Based on that review, comments are reported as noted below:

1. STATUTORY AUTHORITY [s. 227.15 (2) (a)]
Comment Attached YES NO
2. FORM, STYLE AND PLACEMENT IN ADMINISTRATIVE CODE [s. 227.15 (2) (c)]
Comment Attached YES NO
3. CONFLICT WITH OR DUPLICATION OF EXISTING RULES [s. 227.15 (2) (d)]
Comment Attached YES NO
4. ADEQUACY OF REFERENCES TO RELATED STATUTES, RULES AND FORMS
[s. 227.15 (2) (e)]
Comment Attached YES NO
5. CLARITY, GRAMMAR, PUNCTUATION AND USE OF PLAIN LANGUAGE [s. 227.15 (2) (f)]
Comment Attached YES NO
6. POTENTIAL CONFLICTS WITH, AND COMPARABILITY TO, RELATED FEDERAL
REGULATIONS [s. 227.15 (2) (g)]
Comment Attached YES NO
7. COMPLIANCE WITH PERMIT ACTION DEADLINE REQUIREMENTS [s. 227.15 (2) (h)]
Comment Attached YES NO



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Comments

[NOTE: All citations to “Manual” in the comments below are to the Administrative Rules Procedures Manual, prepared by the Revisor of Statutes Bureau and the Legislative Council Staff, dated September 1998.]

2. Form, Style and Placement in Administrative Code

- a. Section Comm 16.24 (1) (a) should be renumbered 16.24 (1).
- b. Section Comm 16.24 (2) (b) should be renumbered 16.24 (2).
- c. In s. Comm 16.395, currently the title of Article 514 is “GASOLINE DISPENSING AND SERVICE STATIONS.” The proposed modification leaves out the “and” in the current rule. If this is intended, it should be shown as stricken.
- d. Section Comm 16.438 should be preceded by “SECTION 38. Comm 16.438 is created to read:”

5. Clarity, Grammar, Punctuation and Use of Plain Language

- a. In s. Comm 16.03 (3) should the phrase “with this chapter” be changed to something like “with the current code’s requirements”? The first sentence of this section allows existing electrical installations to comply with old code requirements. Thus, even installations that do not comply with the current code’s requirements can be in compliance with the chapter if they comply with the old code. As a result the second sentence would not apply to the existing electrical installations referred to in the first sentence. A similar problem occurs in s. Comm 16.03 (4).
- b. In s. Comm 16.20 (2), “In other than dwelling units, all . . .” should be changed to “In units other than dwelling units, all . . .” Further “. . . in the locations specified in pars. (a) to (e) . . .” should be changed to “. . . in the following locations . . . :”.

c. In s. Comm 16.20 (2) (e) it is unclear what the relationship is between “sinks” and the sentence that follows the dash.

d. In s. Comm 16.23 (2) “. . . of similar type buildings . . .” should be changed to “. . . of a similar type of building”

e. In s. Comm 16.37, the use of “. . . and where . . .” is awkward. Could it be replaced with “. . . that are . . .” or could the “and” be deleted? Further, “. . . cable, attachment to the building and equipment, and support . . .” should be changed to “. . . cable, the attachment to the building and equipment, and the support”

f. In s. Comm 16.392, should “Exception” be capitalized? Is it part of the title in the National Electrical Code?



State of Wisconsin \ Department of Commerce

HEARING DRAFT of PROPOSED RULES

Rule No.: Chapter Comm 16

Relating to: Electrical Construction

The Department of Commerce proposes an order to repeal ss. Comm 16.12 (1), Comm 16.295, Comm 16.35, Comm 16.41, Comm 16.437, and Comm 16.44;
to renumber s. Comm 16.23;
to renumber and amend ss. Comm 16.12 (2), Comm 16.24 (1) (b), Comm 16.24 (2) (c), Comm 16.34, Comm 16.355, and Comm 16.36;
to amend ss. Comm 16.02 (2) (e), Comm 16.065, Comm 16.17 (2) (a), Comm 16.25 (1) (a) (intro.), Comm 16.25 (6), Comm 16.25 (7) (title), (intro.) and (b), Comm 16.26 (title), (intro.) and (2), Comm 16.30 (1), Comm 16.33, Comm 16.395, and Comm 16.42 (1);
to repeal and re-create ss. Comm 16.03 (3), Comm 16.11 (1), Comm 16.20, and Comm 16.42 (2);
and to create ss. Comm 16.03 (4), Comm 16.155, Comm 16.215, Comm 16.23, Comm 16.275, Comm 16.294, Comm 16.37, Comm 16.38, Comm 16.39 (1), Comm 16.392, Comm 16.438, Comm 16.49, and Comm 16.52; relating to electrical construction.

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.

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, mobile 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 2002 edition of the NEC. 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 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 2002 edition of the NEC. For example, because of changes in NEC 300.7 (A) of the 2002 NEC relating to sealing of raceways exposed to different temperatures, section Comm 16.295 is being deleted.
2. Revising the rules relating to the application of the code by clarifying the requirements relating to existing installations and by adding requirements for repairs. [Comm 16.03 (3) and (4)]
3. Adding a requirement in dwelling units for installation of GFCI protection at sinks where receptacles are installed to serve countertop surfaces and are located within 6 feet of the sink. [Comm 16.20 (1)]

4. Adding requirements in other than dwelling units for installation of GFCI protection at outdoor receptacles and at sinks where receptacles are installed to serve countertop surfaces and are located within 6 feet of the sink. [Comm 16.20 (2)]

5. Allowing the option of engineering supervision when calculating branch-circuit, feeder and service sizes. [Comm 16.23]

6. Revising the supplemental electrode rule by requiring 2 supplemental made electrodes for all installations, not just for one- and 2-family dwellings. [Comm 16.26 (2)]

7. Adding a requirement for a supplemental equipment grounding conductor for a metallic raceway installed in direct contact with earth, in concrete slabs or floors poured on earth, or in exterior concrete walls below grade. [Comm 16.275]

8. Deleting the NEC requirement for a warning ribbon to identify the location of underground service conductors that are not encased in concrete. [Comm 16.294]

9. Adding a clarification for who is a qualified person to monitor and service a transformer installation over 600 volts. [Comm 16.39 (1)]

10. Deleting the NEC exception allowing mechanical ventilation to be used to exempt the area up to 18 inches above the floor from being classified a hazardous area in commercial garages. [Comm 16.392]

11. Adding a requirement for a service disconnecting means with overcurrent protection at the service point for electrically driven or controlled irrigation machines. [Comm 16.438]

12. Adding a new rule to clarify that a person can request the Department to perform an electrical plan review. [Comm 16.52]

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>
Terry Fameree	International Association of Electrical Inspectors
David Hansen	Dept of Agriculture, Trade and Consumer Protection
Ronald L. Jahnke	NECA, Wisconsin Chapter
Ronald Janikowski	International Association of Electrical Inspectors
Charles L. Johansen	Wisconsin Builders Association
James D. Looch	Wisconsin Public Service Commission
Richard Lynes	Associated Builders and Contractors of Wisconsin
Ronald E. Maassen	NECA, Milwaukee Chapter
Robert Molde	Wisconsin Utilities Association
Ken Peterson	Wisconsin Electric Cooperative Association
Paul Welnak	Wisconsin State AFL-CIO

SECTION 1. Comm 16.02 (2) (e) is amended to read:

Comm 16.02 (2) (e) Installations for the purpose of street or area lighting owned and under exclusive control of electrical utilities or municipal electric departments where located outdoors on property owned or leased by the utility; on or along public highways, streets, roads or similar public thoroughfares; or outdoors on private property by established rights of ~~easement~~ easements, where such installations are in compliance with ch. PSC 114.

SECTION 2. Comm 16.03 (3) is repealed and re-created to read:

Comm 16.03 (3) EXISTING INSTALLATIONS. Existing electrical installations shall conform to the electrical code that applied when the installations were installed. An existing electrical installation that does not comply with this chapter may be required to be brought into compliance with this chapter by the department and within the time period determined by the department when a hazard to life, health or property exists or is created by the installation.

SECTION 3. Comm 16.03 (4) is created to read:

Comm 16.03 (4) REPAIRS. Repairs to electrical installations shall conform to the electrical code that applied when the installations were installed. A repair that does not comply with this chapter may be required to be brought into compliance with this chapter by the department and within the time period determined by the department when a hazard to life, health or property exists or is created by the repair.

SECTION 4. Comm 16.065 is amended to read:

Comm 16.065 Fees. Fees for petitions for variance, electrical plan review and electrical inspections issued under this chapter shall be submitted as specified in ch. Comm 2.

SECTION 5. Comm 16.11 (1) is repealed and re-created to read:

Comm 16.11 (1) MATERIALS. Materials, equipment and products which 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.

SECTION 6. Comm 16.12 (1) is repealed.

SECTION 7. Comm 16.12 (2) is renumbered Comm 16.12 and amended to read:

Comm 16.12 Adoption of standards by reference. The National Electrical Code, ~~NEC-1999~~ NEC-2002, subject to the changes, additions or omissions specified in subch. III, is hereby incorporated by reference into this chapter.

SECTION 8. Comm 16.155 is created to read:

**ARTICLE 80 --
ADMINISTRATION AND ENFORCEMENT**

Comm 16.155 Administration and enforcement [NEC 80]. NEC Article 80 does not apply in Wisconsin.

SECTION 9. Comm 16.17 (2) (a) is amended to read:

Comm 16.17 (2) (a) "Building" means a structure which stands alone or which is separated from adjoining structures by fire walls having not less than a 3-hour ~~fire-resistive~~ fire-resistance rating with all openings in the wall protected with 3-hour ~~fire-rated~~ rated fire door assemblies.

Note: Electrical generating equipment is not considered a structure.

Note: See ~~s. Comm 51.04 for fire-resistive~~ chs. Comm 61 to 65 for fire-resistance standards.

SECTION 10. Comm 16.20 is repealed and re-created to read:

Comm 16.20 Ground-fault circuit-interrupter protection for personnel [NEC 210.8].
(1) DWELLING UNITS [NEC 210.8 (A)]. This is a department rule in addition to the requirements of NEC 210.8 (A) (1) to (8):

Sinks – where receptacles are installed to serve countertop surfaces and are located within 6 feet of the outside edge of the sink, except that a single receptacle or a duplex receptacle for 2 appliances located within dedicated space for each appliance that, in normal use, is not easily moved from one place to another and that is cord-and-plug connected in accordance with NEC 400.7 (A) (6), (A) (7), or (A) (8) shall not be required to have ground-fault circuit-interrupter protection.

(2) OTHER THAN DWELLING UNITS [NEC 210.8 (B)]. Substitute the following wording for NEC 210.8 (B):

In other than dwelling units, all 125-volt, single phase, 15- and 20-ampere receptacles installed in the locations specified in pars. (a) to (e) shall have ground-fault circuit-interrupter protection for personnel:

(a) Bathrooms.

(b) Kitchens – where the receptacles are installed to serve the countertop surfaces.

(c) Outdoors, except as provided in subds. 1. to 3.

1. Receptacles that are not readily accessible and are supplied from a dedicated branch circuit for electric snow-melting or deicing equipment shall be permitted to be installed in accordance with the applicable provisions of Article 426.

2. A single receptacle or a duplex receptacle for 2 appliances located within dedicated space for each appliance that, in normal use, is not easily moved from one place to another and that is cord-and-plug connected in accordance with NEC 400.7 (A) (6), (A) (7) or (A) (8) shall not be required to have ground-fault circuit-interrupter protection.

3. A receptacle installed in a parking area for the purpose of connecting motor vehicle block/tank heaters shall not be required to have ground-fault circuit-interrupter protection.

(d) Commercial garages, repair areas and storage areas where electrical diagnostic equipment, electrical hand tools, or portable lighting equipment are to be used.

(e) Sinks – where receptacles are installed to serve countertop surfaces and are located within 6 feet of the outside edge of the sink, except that a single receptacle or a duplex receptacle for 2 appliances located within dedicated space for each appliance that, in normal use, is not easily moved from one place to another and that is cord-and-plug connected in accordance with NEC 400.7 (A) (6), (A) (7), or (A) (8) shall not be required to have ground-fault circuit-interrupter protection.

SECTION 11. Comm 16.215 is created to read:

Comm 16.215 Common area branch circuits [NEC 210.25]. This is a department rule in addition to the requirements of NEC 210.25:

For service upgrades for existing 2-family dwellings only, installation of common area metering will not be required.

SECTION 12. Comm 16.23 is renumbered Comm 16.205.

SECTION 13. Comm 16.23 is created to read:

**ARTICLE 220 –
BRANCH-CIRCUIT, FEEDER, AND SERVICE CALCULATIONS**

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

Branch-circuit loads shall be computed as shown in NEC 220.3 (A) through (C), or under engineering supervision circuit load calculations may use a lower unit load than identified in Table 220.3 (A) when energy codes restrict lighting loads to an amount lower than the table values.

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

Exception: Under engineering supervision, the feeder or service size may be computed using diversity factors or historical data of similar type buildings, other than one- and 2-family dwelling units.

SECTION 14. Comm 16.24 (1) (b) is renumbered 16.24 (5) and amended to read:

Comm 16.24 (5) (title) CLEARANCES OVER ROADWAYS, WALKWAYS, RAIL, WATER, AND OPEN LAND [NEC 225.60]. Substitute the following wording for the note to NEC ~~225.18~~ 225.60 (C):

Note: For clearances of conductors of over 600 volts, see ch. PSC 114.

SECTION 15. Comm 16.24 (2) (c) is renumbered 16.24 (6) and amended to read:

Comm 16.24 (6) (title) CLEARANCES OVER BUILDINGS AND OTHER STRUCTURES [NEC 225.61]. Substitute the following wording for the note to NEC ~~225.19~~ 225.61 (B):

Note: See ch. PSC 114 regarding clearances of conductors of over 600 volts and for prohibition of constructing dwellings under or near overhead lines.

SECTION 16. Comm 16.25 (1) (a) (intro.) is amended to read:

Comm 16.25 (1) (a) (intro.) These are department informational notes to be used under NEC 230.2 ~~(a)~~ (intro.):

SECTION 17. Comm 16.25 (6) is amended to read:

Comm 16.25 (6) MAXIMUM NUMBER OF DISCONNECTS [NEC 230.71]. These ~~exceptions~~ are department rules in addition to the ~~exception~~ requirements in NEC 230.71 ~~(a)~~ (A):

(a) ~~Exception No. 1.~~ Individual dwelling units shall have a single main disconnecting means for each metered service, except services rated 300 amperes or more shall be permitted to have 2 service disconnecting means.

(b) ~~Exception No. 2.~~ Additional disconnecting means installed on individual dwelling units as permitted for different uses, such as for different rate schedules, permitted by ~~NEC 230.2~~ Exception No. 6 NEC 230.2 (D), shall be allowed to remain should subsequent changes in use occur.

(c) ~~Exception No. 3~~. Not more than 6 circuit breakers shall be permitted to be installed in existing dual or split bus service panelboards installed prior to February 1, 1968.

SECTION 18. Comm 16.25 (7) (title), (intro.) and (b) are amended to read:

Comm 16.25 (7) (title) RATING OF ~~DISCONNECT SERVICE~~ DISCONNECTING MEANS [NEC230.79]. This is a department rule in addition to the requirements of NEC 230.79 (e):

(b) *Two- or multi-family dwellings*. Except as provided in par. (c), for 2-family or multi-family dwellings, the service equipment shall have a rating of not less than 150 amperes, 3-wire or 4-wire. Where the combined rating of all service disconnecting means is 150 amperes or larger, the service or feeder equipment rating for each dwelling unit shall have a rating of not less than ~~50~~ 60 amperes.

SECTION 19. Comm 16.26 (title), (intro.) and (2) are amended to read:

Comm 16.26 (title) Grounding electrode system installation [NEC ~~250-50~~ 250.53]. These are department rules in addition to the requirements of NEC ~~250-50 (a)~~ 250.53 (D) (2):

(2) TWO SUPPLEMENTAL ELECTRODES. ~~For one- and two-family dwellings, where~~ Where the supplemental electrode required by NEC ~~250-50 (a)~~ 250.53 (D) (2) consists of made electrodes specified in NEC ~~250-52~~ 250.52 (A) (5), not less than 2 supplemental made electrodes shall be installed.

SECTION 20. Comm 16.275 is created to read:

Comm 16.275 Types of equipment grounding conductors [NEC 250.118]. This is a department rule in addition to the requirements of NEC 250.118:

A metallic raceway installed in direct contact with earth, in concrete slabs or floors poured on earth, or in exterior concrete walls below grade shall be augmented with a supplemental equipment grounding conductor identified in NEC 250.118 (1). This supplemental conductor shall be sized in accordance with NEC 250.122. An aluminum equipment grounding conductor used for this purpose shall be insulated.

SECTION 21. Comm 16.294 is created to read:

Comm 16.294 Underground installations [NEC 300.5]. NEC 300.5 (D) (3) does not apply in Wisconsin.

SECTION 22. Comm 16.295 is repealed.

SECTION 23. Comm 16.30 (1) is amended to read:

Comm 16.30 (1) ADJUSTMENT FACTORS [NEC 310.15 (B) (2)]. This is a department exception in addition to the exceptions specified in NEC 310.15 (B) (2) (a):

Exception No. ~~5~~ 6: The derating factors shown ~~above~~ in Table 310.15 (B) (2) (a) do not apply to branch circuits supplying an individual dwelling unit.

SECTION 24. Comm 16.33 is amended to read:

ARTICLE ~~348~~ 358 --
ELECTRICAL METALLIC TUBING: TYPE EMT

Comm 16.33 (title) ~~Use [NEC 348-4]~~ Uses permitted [NEC 358.10]. This is a department rule in addition to the requirements of NEC ~~348-4~~ 358.10:

Electrical metallic tubing shall not be used in direct contact with earth, in concrete slabs or floors poured on earth, or in exterior concrete walls below grade.

SECTION 25. Comm 16.34 is renumbered 16.32 and amended to read:

ARTICLE ~~370~~ 314 --
**OUTLET, DEVICE, PULL AND JUNCTION BOXES;
CONDUIT BODIES; ~~AND FITTINGS; AND MANHOLES~~**

Comm 16.32 **Conductors entering boxes, conduit bodies, or fittings** [NEC ~~370-17~~ 314.17] This is a department exception in addition to the requirements of NEC ~~370-17 (b) and (c)~~ 314.17 (B) and (C):

Exception. ~~Cable~~ Non-metallic 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.

SECTION 26. Comm 16.35 is repealed.

SECTION 27. Comm 16.355 is renumbered 16.325 and amended to read:

Comm 16.325 **Outlet boxes** [NEC ~~370-27~~ 314.27]. This is a department rule in addition to the requirements of NEC ~~370-27 (a)~~ 314.27 (A):

In a dwelling unit, a ceiling outlet box installed for use as a lighting fixture outlet in a habitable room or kitchen and located where a ceiling fan could be installed shall be a type listed for ceiling fan support.

SECTION 28. Comm 16.36 is renumbered 16.31 and amended to read:

**ARTICLE 373 312 --
CABINETS, ~~AND~~ CUTOUT BOXES, AND METER SOCKET ENCLOSURES**

**Comm 16.31 (title) ~~Conductors entering cabinets or cutout boxes [NEC 373-5]~~
Cabinets, cutout boxes, and meter socket enclosures [NEC 312.5].** This is a department exception in addition to the requirements of NEC ~~373-5 (e)~~ 312.5 (C):

Exception. ~~Cable~~ Non-metallic 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.

SECTION 29. Comm 16.37 is created to read:

**ARTICLE 400 --
FLEXIBLE CORDS AND CABLES**

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) and where 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, attachment to the building and equipment, and support comply with the provisions of NEC 368.8 (B).

SECTION 30. Comm 16.38 is created to read:

**ARTICLE 430 --
MOTORS, MOTOR CIRCUITS, AND CONTROLLERS**

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.

SECTION 31. Comm 16.39 (1) is created to read:

Comm 16.39 (1) OVERCURRENT PROTECTION [NEC 450.3]. This is a department rule in addition to NEC Table 450.3 (A) Note 3:

The qualified person can be either an employee at that location or an employee contracted for this purpose who is readily available.

SECTION 32. Comm 16.392 is created to read:

**ARTICLE 511 –
COMMERCIAL GARAGES, REPAIR AND STORAGE**

Comm 16.392 Classifications of locations [NEC 511.3]. Section NEC 511.3 (B) (1) Exception does not apply in Wisconsin.

SECTION 33. Comm 16.395 is amended to read:

**ARTICLE 514 –
GASOLINE MOTOR FUEL DISPENSING SERVICE STATIONS FACILITIES**

Comm 16.395 Circuit disconnects [NEC ~~514-5~~ 514.11]. Substitute the following wording for NEC ~~514-5 (b)~~ 514.11 (B):

At attended self-service stations, emergency controls as specified in NEC ~~514-5 (a)~~ 514.11 (A) shall be installed at a location acceptable to the authority having jurisdiction. Where such controls are located over 100 feet from any dispenser, a two-way means of communication shall be provided between all dispenser locations and the attendant's area.

Note: The disconnect requirements found in NEC 514.11 and NEC 514.13 are required by ch. Comm 10 for combustible liquid dispensers such as diesel fuel.

SECTION 34. Comm 16.41 is repealed.

SECTION 35. Comm 16.42 (1) is amended to read:

Comm 16.42 (1) (title) ~~SERVICE EQUIPMENT, SEPARATELY DERIVED SYSTEMS, FEEDERS, DISCONNECTING MEANS, AND GROUNDING [NEC 547-8] ELECTRICAL SUPPLY TO BUILDINGS OR STRUCTURES FROM A DISTRIBUTION POINT [NEC 547.9].~~ (a) This is a department informational note to be used under NEC ~~547-8 (a) and (c)~~ 547.9 (A):

Note: A pole-top disconnect is recognized as the service disconnecting means required by this section.

SECTION 36. Comm 16.42 (2) is repealed and re-created to read:

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

SECTION 37. Comm 16.437 is repealed.

**ARTICLE 675 --
ELECTRICALLY DRIVEN OR CONTROLLED IRRIGATION MACHINES**

Comm 16.438 Disconnecting means [NEC 675.8]. This is a department rule in addition to the requirements of NEC 675.8:

A service disconnecting means with overcurrent protection shall be provided at the service point in accordance with NEC 230 VI.

SECTION 39. Comm 16.44 is repealed.

SECTION 40. Comm 16.49 is created to read:

**ARTICLE 702 --
OPTIONAL STANDBY SYSTEMS**

Comm 16.49 Optional standby systems [NEC 702]. This is a department rule in addition to the requirements of NEC 702:

Where an outdoor housed generator set is equipped with a readily accessible disconnecting means located within sight of the building or structure supplied, an additional disconnecting means shall not be required where ungrounded conductors pass through the building or structure.

SECTION 41. Comm 16.52 is created to read:

Comm 16.52 Electrical plan review. Upon request, the department may perform electrical plan review for dwellings, public buildings, places of employment, and electrical services.

END

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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Scott McCallum, Governor
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September 9, 2002

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Dear Chief Clerks:

**TRANSMITTAL IN FINAL DRAFT FORM OF ADMINISTRATIVE
RULES AND REPORT**

CLEARINGHOUSE RULE NO.: 02-072

RULE NO.: Chapter Comm 16

RELATING TO: Electrical Construction

Pursuant to section 227.19, Stats., agencies are required to submit, in triplicate, copies of the proposed administrative rules in final draft form together with a rule report and an analysis. The recommendations received from the Legislative Council are also to be submitted.

At this time, this material, together with cover letters to the President of the Senate and the Speaker of the Assembly, is being transmitted for referral to the standing committees for legislative review.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Philip Edw. Albert', written over a horizontal line.

Philip Edw. Albert
Secretary



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Madison, Wisconsin 53707
(608) 266-1018
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Scott McCallum, Governor
Philip Edw. Albert, Secretary

September 9, 2002

Senator Fred Risser
President of the Senate
Room 220 South, State Capitol
Madison, Wisconsin 53702

Representative Scott Jensen
Speaker of the Assembly
Room 211 West, State Capitol
Madison, Wisconsin 53702

Dear Senator Risser and Representative Jensen:

NOTICE OF ADMINISTRATIVE RULES IN FINAL DRAFT FORM

CLEARINGHOUSE RULE NO.: 02-072

RULE NO.: Chapter Comm 16

RELATING TO: Electrical Construction

Section 227.19, Stats., requires agencies to submit proposed rules in final draft form to the presiding officer of each house for referral to the appropriate legislative standing committees.

The following information, as required by law, is being submitted to you.

1. Rules in final draft form (in triplicate).
2. Report consisting of:
 - a) Rule Report.
 - b) Public Hearing Attendance Record.
 - c) Public Hearing Comment and Agency Response Form.
 - d) Legislative Council Rules Clearinghouse Report.
 - e) Response to Legislative Council Rules Clearinghouse Report.
 - f) Fiscal Estimate.
 - g) Final Regulatory Flexibility Analysis.

If you have any questions regarding this matter, please do not hesitate to contact us.

Respectfully submitted,

Philip Edw. Albert
Secretary

Fiscal Estimate — 2001 Session

- Original Updated
 Corrected Supplemental

LRB Number	Amendment Number if Applicable
Bill Number	Administrative Rule Number Ch. Comm 16

Subject
 Electrical Construction

Fiscal Effect

State: No State Fiscal Effect

Check columns below only if bill makes a direct appropriation or affects a sum sufficient appropriation.

- Increase Existing Appropriation Increase Existing Revenues
 Decrease Existing Appropriation Decrease Existing Revenues
 Create New Appropriation

Increase Costs — May be possible to absorb within agency's budget.

Yes No

Decrease Costs

Local: No Local Government Costs

- | | |
|--|---|
| 1. <input type="checkbox"/> Increase Costs
<input type="checkbox"/> Permissive <input type="checkbox"/> Mandatory | 3. <input type="checkbox"/> Increase Revenues
<input type="checkbox"/> Permissive <input type="checkbox"/> Mandatory |
| 2. <input type="checkbox"/> Decrease Costs
<input type="checkbox"/> Permissive <input type="checkbox"/> Mandatory | 4. <input type="checkbox"/> Decrease Revenues
<input type="checkbox"/> Permissive <input type="checkbox"/> Mandatory |

5. Types of Local Governmental Units Affected:

- Towns Villages Cities
 Counties Others
 School Districts WTCS Districts

Fund Sources Affected

- GPR FED PRO PRS SEG SEG-S

Affected Chapter 20 Appropriations

None

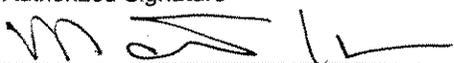
Assumptions Used in Arriving at Fiscal Estimate

The Safety and Buildings Division is responsible for administering and enforcing chapter Comm 16. The proposed rules do not contain any changes in the Division's fees charged for administering and enforcing chapter Comm 16. Also, the proposed rules will not create any additional workload costs. Therefore, the proposed rules will not have any fiscal effect on the Division.

Local municipalities may voluntarily enforce chapter Comm 16, and they have the authority to offset any costs by charging appropriate fees.

Long-Range Fiscal Implications

None known.

Prepared By: Robert DuPont	Telephone No. 266-8984	Agency Commerce
Authorized Signature 	Telephone No.	Date (mm/dd/ccyy) 5/28/02

Fiscal Estimate Worksheet — 2001 Session
 Detailed Estimate of Annual Fiscal Effect

Original Updated
 Corrected Supplemental

LRB Number	Amendment Number if Applicable
Bill Number	Administrative Rule Number Ch. Comm 16

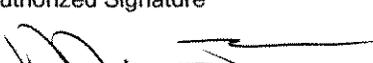
Subject
 Electrical Construction

One-time Costs or Revenue Impacts for State and/or Local Government (do not include in annualized fiscal effect):
 None known.

Annualized Costs:		Annualized Fiscal Impact on State Funds from:	
		Increased Costs	Decreased Costs
A. State Costs by Category			
State Operations — Salaries and Fringes	\$	\$ -	
(FTE Position Changes)	(0.00 FTE)	(- 0.00 FTE)
State Operations — Other Costs		-	
Local Assistance		-	
Aids to Individuals or Organizations		-	
Total State Costs by Category	\$	0	\$ - 0
B. State Costs by Source of Funds			
GPR	\$	\$ -	
FED		-	
PRO/PRS		0	- 0
SEG/SEG-S		-	
State Revenues	Complete this only when proposal will increase or decrease state revenues (e.g., tax increase, decrease in license fee, etc.)	Increased Revenue	Decreased Revenue
GPR Taxes	\$	\$ -	
GPR Earned		-	
FED		-	
PRO/PRS		0	- 0
SEG/SEG-S		-	
Total State Revenues	\$	0	\$ - 0

Net Annualized Fiscal Impact

	State	Local
Net Change in Costs	\$ 0	\$ 0
Net Change in Revenues	\$ 0	\$ 0

Prepared By: Robert DuPont	Telephone No. 266-8984	Agency Commerce
Authorized Signature 	Telephone No.	Date (mm/dd/ccyy) 5/28/02

RESPONSE TO LEGISLATIVE COUNCIL CLEARINGHOUSE REPORT

Department of Commerce

CLEARINGHOUSE RULE NO.: 02-072

RULE NO.: Chapter Comm 16

RELATING TO: Electrical Construction

Agency contact person for substantive questions.

Name: Joe Hertel

Title: Program Manager

Telephone No. 608/266-5649

Legislative Council report recommendations accepted in whole.

Yes

No

1. Review of statutory authority [s. 227.15(2)(a)]

a. Accepted

b. Accepted in part

c. Rejected

d. Comments attached

2. Review of rules for form, style and placement in administrative code [s. 227.15(2)(c)]

a. Accepted

b. Accepted in part

c. Rejected

d. Comments attached

(Continued on reverse side)

3. Review rules for conflict with or duplication of existing rules [s. 227.15(2)(d)]

- a. Accepted
- b. Accepted in part
- c. Rejected
- d. Comments attached

4. Review rules for adequate references to related statutes, rules and forms [s. 227.15(2)(e)]

- a. Accepted
- b. Accepted in part
- c. Rejected
- d. Comments attached

5. Review language of rules for clarity, grammar, punctuation and plainness [s. 227.15(2)(f)]

- a. Accepted
- b. Accepted in part
- c. Rejected
- d. Comments attached

6. Review rules for potential conflicts with, and comparability to, related federal regulations [s. 227.15(2)(g)]

- a. Accepted
- b. Accepted in part
- c. Rejected
- d. Comments attached

7. Review rules for permit action deadline [s. 227.15(2)(h)]

- a. Accepted
- b. Accepted in part
- c. Rejected
- d. Comments attached

RULE REPORT

Department of Commerce

Rule No.: Chapter Comm 16

Relating to: Electrical Construction

Agency contact person for substantive questions:

Name Joe Hertel

Title Program Manager

Telephone Number 608/266-5649

Agency contact person for internal processing:

Name Ronald Acker

Title Code Consultant

Telephone Number 608/267-7907

1. Agency statutory authority under which the agency intends to promulgate the rule(s).
Sections 101.02 (1), 101.63 (1), 101.73 (1) and 101.82, Stats.
2. Citation of federal regulations which require adoption or which are relevant to the proposed rule(s).
None known.
3. Citation of court decisions which are applicable to the proposed rule(s).
None known.

4. Description of the proposed rule(s).

The proposed rules consist of an update of chapter Comm 16, Electrical Code, including the incorporation by reference of the 2002 edition of the National Electrical Code (NEC) published by the National Fire Protection Association. The update of chapter Comm 16 involves deleting several current rules that are covered in the 2002 NEC, and adding rules where the NEC needs clarification or reinforcement. The rule proposal does not contain any revisions to the current rules for the electrical inspection of farms, public buildings and places of employment.

5. Reason for the proposed rule(s).

The proposed rules have been developed in order to keep the state electrical code up-to-date with nationally recognized practices in electrical construction.

FINAL REGULATORY FLEXIBILITY ANALYSIS

Department of Commerce

CLEARINGHOUSE RULE NO.: 02-072

RULE NO.: Chapter Comm 16

RELATING TO: Electrical Construction

Final regulatory flexibility analysis not required. (Statement of determination required.)

Sections 101.63(1), 101.73(1) and 101.82, Stats., direct the Department to promulgate rules for the construction and inspection of electrical construction in dwellings, public buildings and places of employment. The proposed rules of Clearinghouse Rule No. 02-072 are minimum requirements to meet the directives of the Statutes, and any exceptions from compliance for small businesses would be contrary to the Statutory objectives which are the basis for the rules.

1. Reason for including or failing to include the following methods for reducing impact of the rule on small businesses: Less stringent compliance or reporting requirements; less stringent schedules or deadlines for compliance or reporting requirements; simplification of compliance or reporting requirements; establishment of performance standards to replace design or operational standards; exemption from any or all requirements.
2. Issues raised by small businesses during hearings, changes in proposed rules as a result of comments by small businesses and reasons for rejecting any alternatives suggested by small businesses.

(Continued on reverse side)

3. Nature and estimated cost of preparation of any reports by small businesses.
4. Nature and estimated cost of other measures and investments required of small businesses.
5. Additional cost to agency of administering or enforcing a rule which includes any of the methods in 1. for reducing impact on small businesses.
6. Impact on public health, safety and welfare caused by including any of the methods in 1. for reducing impact on small businesses.

DEPARTMENT OF COMMERCE
SUMMARY OF PUBLIC HEARING COMMENTS AND AGENCY RESPONSE

Clearinghouse Rule No.: 02-072		Hearing Location: Pewaukee	
Rule Number: Chapter Comm 16		Hearing Date: June 27, 2002	
Relating to: Electrical Construction			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
Oral	John Cyr NECA/IATC Milwaukee, WI	<p>1. Objection to Comm 16.38; this was added outside of committee. Although the NEC wording presents problems in administration because the format and language is ambiguous, there is a resolution that will be submitted.</p> <p>2. Concerned with Comm 16.21 being removed again outside of committee. This is a concern and not an objection.</p> <p>3. Concerned with the need to better define what a structure is. This results in much inconsistency in the electrical community. An example is a canopy at a filling station. Recommends not defining in section NEC 100. All issues should be resolved through a committee.</p>	<p>1. Agree in part. The department's proposal is to retain the language currently used in the 1999 NEC which requires a disconnect at the motor but allows an exception where the disconnect at the controller location is lockable. Proposed Comm 16.38 has been revised by adding "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."</p> <p>2. Concern noted.</p> <p>3. Agree in part. This definition creates additional concerns with the required disconnecting means and number of circuits allowed to a structure. The proposed rules have been revised by adding Comm 16.17 (3), indicating that this definition does not apply.</p>
1	David A. Miller IBEW Local 494 Muskego, WI	The exception in Comm 16.38 is ridiculous. The ramifications of this could be catastrophic, such as dismemberment of body parts or loss of life. Many times there are MCC Centers or a cluster of disconnects not properly marked.	See response to John Cyr comment 1.
2	Michael Mueller Local Union 494 IBEW Big Bend, WI	The proposed code change to eliminate the requirement for the disconnect within site of the motor is a step backwards as far as safety is concerned. The intent of the NEC is to provide safe electrical installations. When working in industrial plants where the disconnect is not near the equipment to be worked on, you are betting your life that there is no one with a bolt cutters.	See response to John Cyr comment 1.
Oral	John R. Grau Affordable Electric, Inc. Mequon, WI (Small business)	Objects to Comm 16.23 because engineering supervision does not include designer of engineering systems as being qualified to submit calculations. That definition should be in the code.	Agree. Comm 16.23 has been revised to include a Wisconsin professional engineer, architect and designer of electrical systems.

**DEPARTMENT OF COMMERCE
SUMMARY OF PUBLIC HEARING COMMENTS AND AGENCY RESPONSE**

Clearinghouse Rule No.: 02-072		Hearing Location: Pewaukee	
Rule Number: Chapter Comm 16		Hearing Date: June 27, 2002	
Relating to: Electrical Construction			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
3	Tim Hanson International Brotherhood of Electrical Workers Muskego, WI	Concerned with addition of the exception to Comm 16.38. Lockout procedures from company to company and work site to work site vary and at times are non-existent or ignored. There are cases of people removing locks and energizing circuits, and of them being miss-marked and inadvertently turned on. This proposal flies in the face of the NEC and the reason it was established.	See response to John Cyr comment 1.
4	Eric Dlouhy Local 494 West Allis, WI	Against Comm 16.38. The exception to the article is too vague and can be open to interpretation.	See response to John Cyr comment 1.
5	Robert D. Rayburn National Electrical Contractors Association Milwaukee, WI (Small business)	Registering against Comm 16.38 proposal on behalf of 100+ electrical contractors in the greater Milwaukee area.	See response to John Cyr comment 1.
6	Ellen C. Talavera Local Union 494 Sussex, WI	Against Comm 16.38. There are 3 problems with the 1999 NEC code language concerning motor disconnects. Though there is question on the ease of enforcement, requiring a disconnect within sight of a motor is a step forward. Requiring the lockout to be permanent when the disconnect is not in sight is also increasing safety for people dealing with the equipment. The third concern is how this Comm 16 change was introduced; these decisions are committee consensual, not a 1 person/2 person decision.	See response to John Cyr comment 1.
7	Patrick Clancy Clancy Electric Wauwatosa, WI (Small business)	1. New Comm 16.16 (1) Rop (1-5) Article 80. Recommendation: OMIT the whole Article from the NEC 2002. Re-number (1), (2), (3) as (2), (3), (4). Substantiation: ss 101. Covers the Administration and Enforcement of the State Electrical Code. To support Panel position in 16.155. 2. Change Comm 16.01 Note 2 Rop (1-5) Article 90.1 (d). Recommendation: Add the wording from the FRN on IEC 60364-1 to (2) of this section. Substantiation: With the adoption of the IEC into the State of Wisconsin,	1. Agree. Article 80 is omitted under proposed Comm 16.155. 2. Disagree. All of Article 90 does not apply in Wisconsin. The state of Wisconsin does not adopt the IEC standard.

**DEPARTMENT OF COMMERCE
SUMMARY OF PUBLIC HEARING COMMENTS AND AGENCY RESPONSE**

Clearinghouse Rule No.: 02-072		Hearing Location: Pewaukee	
Rule Number: Chapter Comm 16		Hearing Date: June 27, 2002	
Relating to: Electrical Construction			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
7	Patrick Clancy (continued)	<p>and Excepting the Electrical Section. This informational note is important. However, the basic paragraph is really hard to enforce. But if equipment comes through with all parts assembled to this and the code doesn't require listed products. It would be nice to have. This is more OSHA back yard.</p> <p>3. Add Comm 16.02 (2) e Rop (1-84) Article 90-2 (b) 5. Recommendation: Add the word <i>LEGALLY</i> between as and easements in the last sentence. Substantiation: In order for an easement to be proper the term should be legal by law. The Electrical Utilities comply to the PSC. But there were a number of installers of CATV that did not stay on power company right of ways. The word established means if I install my cable under your bed room window when you are not home, and you find it 5 years late will I'm established.</p> <p>4. Change Comm 16.08 Note Recommendation: Add or delete obsolete Comm section. Substantiation: In light of the changes to ss 101 adoption of IBC rule and the changes to Comm 50 - 64 of the building code.</p> <p>5. New Comm 16.16 (5) 90.9 (b) & (c) Rop 1-96 90.9 (B) & (C). Recommendation: Add, The following sections of the NEC 90.9 (b) & (c) do not apply in Wisconsin. And add the following, The inch-pound measurements shall always be used unless the manufacturer instructions require metric dimensions. Substantiation: There is NO true conversion between metric and inch-pound; there will always be a fraction of an inch difference between them. Why open the door for misinterpretations. Let's not forget 370.20 and the discussion over a 1/4". We may have to address every article that gives a measurement. Example 210.52 (a) 1.8 m or 6 feet, Well its actually 5 foot 10 1/2". Until all the other Trades go to the metric system all this is going to do is create a stupid problem.</p>	<p>3. Disagree. There is not adequate justification for the proposed change.</p> <p>4. Agree. Changes relating to the adoption of the IBC have been made.</p> <p>5. Disagree. All of Article 90 does not apply in Wisconsin. Most model codes are using dual values.</p>

DEPARTMENT OF COMMERCE
SUMMARY OF PUBLIC HEARING COMMENTS AND AGENCY RESPONSE

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7	Patrick Clancy (continued)	<p>9. New Comm 16.17 (4) & (4) Note Change: Definition of Structures by deleting the word "Built" and ADD a NOTE #2 to read: Note #1 Electrical generating equipment is not considered a structure. Note #2 Outside luminaires (fixtures) mounted on poles are not considered a structure. Note #3 Outside canopies provided to allow customers shelter from the rain & snow, etc. Add: NOTE: Luminaires used in parking lots and other similar areas are not structures as it applies to electrical installation. Substantiation: Without this Note all POLES and LIGHTING FIXTURES will be required to have a DISCONNECT and GROUND RODS installed. See 250-54 Will require a rod at each pole. We have never required this in Wisconsin. It needs to be in writing somewhere.</p> <p>10. New Comm 16.20 (b) 2 Prop 2-63 210.8 (b) 3. Recommendation: Add the phrase " (2) KITCHENS OF RESTAURANTS". Where the receptacles are installed to serve the countertop surfaces. Substantiation: The real hazard is occurring in restaurants. The serving from steel or metallic surfaces that are grounded. To require this in every office suite or small shop in malls. Just because there is a small room used by an employee to eat or warm up microwave dinners is uncalled for expense. There are areas that may not be a room, but a table in the middle of a large shop. What about the receptacle for the refrigerator? We found this out at the cost of food spoiled and contractor paid out when they trip. Hasn't history taught us a thing about how these devices work? Note: If it's licensed as a restaurant there is no question that it's a kitchen that requires GFCL. If an employer cooks food for their employee they are required to have a license. The doors open for all different interpretation by every city as to what a kitchen is. The building code leaves a big question as to What is a Commercial Kitchen?</p>	<p>9. See response to John Cyr comment 3.</p> <p>10. Agree in part. Changes were made in Comm 16.20 that go beyond the NEC requirement but specify that only receptacles installed to serve countertop surfaces in kitchens are required to have GFCL protection. This recognizes the concern with refrigeration equipment on GFCL protected circuits.</p>
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DEPARTMENT OF COMMERCE
SUMMARY OF PUBLIC HEARING COMMENTS AND AGENCY RESPONSE

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Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
7	Patrick Clancy (continued)	<p>11. Add Comm 16.20 (B) 6 Sinks in Janitor or Maintenance Closets Recommendation: Add a NEW (6) to the state proposal to read "within 6 feet of all sinks in maintenance and janitorial areas." Substantiation: The same hazards exist to employees in this area as in kitchens.</p> <p>12. Add Comm 16.20 (B) 7 Roof Tops Recommendation: This was deleted in the re-write and should continue to be required to be GFCI protected.</p> <p>13. New Comm 16.21 or (Delete requirement for AFCI All Devices) Rop 2-103 210.12 (b) AFCI Dwelling unit bedrooms. Recommendation: Change the wording in the proposal to read the same as the Comm 16.21 of the 1999. Substantiation: This Section should stay DELETE in Wisconsin. If you read the ROP comments made by the panel member (Brown) in Rop 2-102 & 2-106 (Moore) 2-103. There are a lot of questions on both sides of this subject. Pro & Con. In Wisconsin we have NEVER succumbed to manufacturer pressure to sell a product. This product still leaves many questions unanswered. Last code cycle they told us it will work ALWAYS. Now that they are in use. They are telling us you will now need a two pole circuit breaker on multi-wired branch circuits. They trip on older circuits like Knob & Tube wiring or older NM cables without a ground. Why!!! Or will not create a 30 mA fault. They say well there is a problem there only required on NEW circuits. The Circuit Breaker manufacturers want the whole market. The receptacle manufacturer tells us that they are not in production. Leave the other states customers work out the bugs. We paid the price with GFCI's. If a date is required for adoption do it on a code year. Training is hard enough every three years.</p> <p>14. Comm 16.215 Re-New proposal # Comm 16.25? Add the following Exception to 210.25: Exception: Common areas of existing two family dwelling units shall not be required to be metered. Substantiation: This new exception will allow but not require individual</p>	<p>11. Disagree. GFCI protection was not added to sinks in general for other than dwelling units. There is no substantiation of portable appliance use in janitorial or maintenance closets.</p> <p>12. Agree. Rooftop receptacles are outdoors and as such are required to be GFCI protected under proposed Comm 16.20 (2) (c).</p> <p>13. Agree. The current deletion of the AFCI requirement under Comm 16.21 is being retained. Although the advisory council had recommended modifying the NEC and allowing the use of AFCI receptacles to meet the AFCI requirement, these devices are not currently available.</p> <p>14. Agree in part. The NEC does not require metering but does require separation of branch circuits in section 210.25. Metering rules are the authority of the PSC under chapter PSC 113. Proposed Comm 16.215 has</p>

DEPARTMENT OF COMMERCE
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Relating to: Electrical Construction			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
7	Patrick Clancy (continued)	<p>metering for common loads. The requirement to rewire all the common areas in existing two family dwelling is very costly. Doesn't provide more safety. Note that Article 230 does not require common metering, only the PSC 114 does that.</p> <p>15. Comm 16.22 (3) New 210.52 (B) (I) Boathouses For one and two family dwelling units at least one receptacle outlet shall be installed in the boathouse. Substantiation: Boathouses are like garages, they are used to do maintenance on boats. Using the Rules in 400.8 Don't substitute for building wiring is not the right call. If the receptacle is not required then, by using a cord to power the tool you are not substituting.</p> <p>16. Comm 16.22 (4) New 210.52 (C) 5 or (6) Delete the following: "appliance garages" Add a new (C) 6 Appliance Garages At least one 120 volt, 20 ampere receptacle outlet shall be installed to serve the each appliance garage. An individual branch circuit shall be used. Substantiation: The larger appliance garages are being used to close off counter tops. You can put two garages on each side of a sink and NO OUTLETS WILL BE REQUIRED, because there is NO counter top. Also appliances used in these garages are larger ones like microwaves & etc.</p> <p>17. Comm 16.295 Delete 300.7 (A) Substantiation: Now Covered by the NEC 2002 in section 300.7 (A).</p> <p>18. Comm 16.294 New 300.5 (D) Delete the requirement for the Warning Ribbon. Substantiation: Tough to install and enforce.</p> <p>19. Comm 16.30 Change Change the reference to Exception #6 from #5 as they added a new exception #5 in 2002 code.</p>	<p>been revised to read "For service upgrades for existing 2-family dwellings only, separation of common area branch circuits will not be required."</p> <p>15. Disagree. If a receptacle is installed in, on or outside of a boathouse, GFCI protection is required by the NEC. The receptacle is not required and not having a receptacle does not in itself create a hazard.</p> <p>16. Disagree. There is not adequate justification for the proposed change.</p> <p>17. Agree. The proposed rules include the repeal of Comm 16.295.</p> <p>18. Agree. The requirement for the warning ribbon is being deleted under proposed Comm 16.294.</p> <p>19. Agree. The change is being made under proposed Comm 16.30 (1).</p>

DEPARTMENT OF COMMERCE
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Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
7	Patrick Clancy (continued)	<p>20. The Following Code Rules in Comm 16 should be renumbered as 16.33 refers to 312.5 as 16.36 refers to 358.12 Substantiation: To keep NEC code order in the State Code.</p> <p>Comm 16.33 Change refer: Change code reference to 358.12 Comm 16.34 Change refer: Change code reference to 314.17 Comm 16.35 Delete 370.20 Substantiation: delete for state now covered by NEC 2002 in section 314.20. Comm 16.36 Change refer: Change code reference to 312.5</p> <p>21. New Comm 16.38 Motors Disconnects Delete the Exception in 430.102 (B) Add the following exceptions: Exception #1: The disconnecting means shall not be required to be in sight from the motor and/or the driven machinery locations. Under all of the following conditions. (a) The switch or disconnect required in 430.102 (A) is fully horse power rated for the motor(s). (b) The switch or disconnect required in 430.102 (A) is individually capable of being locked in the open position or a listed (factory or field) locking provision permanently installed on the disconnect or switch. (c) A permanent sign or placard be installed at the motor junction box. "Disconnect and Lockout All Power Before Servicing". Exception #2: The disconnecting means shall not be required to be in sight from the motor and/or driven machinery locations. In industrial and commercial installations where proper orderly shut down is required. A written safety procedures shall be posted at the disconnect required in 430.102 (A) and where condition of maintenance and licensed engineering supervision ensures that only qualified persons service the equipment. Substantiation: There are too many cases where impractical or introduces</p>	<p>20. Agree. Chapter section numbers are being renumbered to keep NEC code order.</p> <p>21. See response to John Cyr comment 1.</p>

DEPARTMENT OF COMMERCE
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Relating to: Electrical Construction			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response

7	Patrick Clancy (continued)	<p>additional or increased hazards becomes one person's choice. Example opening a class 1 division 1 disconnect that has a vapor or gas inside will make the equipment inside the enclosure blow up. You don't see it until you open the disconnect to inspect. What happens if the electrician doesn't and leaves a bad switch? Do you want it to be the need to open it under a load?</p> <p>Example HVAC persons have been trained to open the disconnect on the unit and ALL the PARTS ARE OFF. I install a disconnect in sight of the tower fan motor on the roof. The Feed Pump motor brings water to the tower operate at 480 volt control. Pump is in the basement. Control is on the backside of the tower. The HVAC mechanic turns off the disconnect. WELL is the CONTROL DEAD or IS HE?</p> <p>The Article addresses lazy persons in the workplace. If you are too lazy to walk over and disconnect and lock and tag the equipment. What next? Maybe next in 2005 we can mandate automatic shut if the personnel gets within 6 feet of the motor. We can all have a chip put in so auto tracking knows where we are and shuts off the equipment for us? Leave the 2 FRN in place.</p> <p>22. Comm 16.39 (1) Add a Note Note: Readily available, as used in this section shall mean at the transformer location within one hour. Substantiation: This puts a time with reality. I could be in Florida and be readily available. 3 hr. 20 min. away by plane on a good day.</p> <p>23. Comm 16.392 (1) 511.3 (B) (1) Delete the exception. Substantiation: No one is allowing the ventilation system to stay on and four air changes is not defined to ensure outside air is being used.</p>	<p>22. Disagree. There is not adequate justification for the proposed change.</p> <p>23. Agree. The proposed Comm 16.392 deletes the exception.</p>
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DEPARTMENT OF COMMERCE
SUMMARY OF PUBLIC HEARING COMMENTS AND AGENCY RESPONSE

Clearinghouse Rule No.: 02-072		Hearing Location: Pewaukee	
Rule Number: Chapter Comm 16		Hearing Date: June 27, 2002	
Relating to: Electrical Construction			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
7	Patrick Clancy (continued)	<p>24. Comm 16.392 (2) 511.3 (B) (2) Delete the wording "except where ventilation of at least four air changes per hour is provided." Substantiation: If the owners will not run ventilation systems with car when gasoline is used, what makes you think they are going to run it when compressed natural gas (CNG) is now used.</p> <p>25. Comm 16.41 re-number to Comm 16.40 Comm 16.40 Wiring methods 518.4 (B) Nonmetallic sheathed cable, Type A/C cable, electrical nonmetallic conduit shall be permitted to be installed in those buildings or portions thereof that are not required to be of a fire-resistance-rated or fire wall construction by the International Building Code Chapter 7.</p> <p>26. Comm 16.41 Change 527.4 (B) & (C) Recommendation: Change the last sentence to read: For the purpose of this section. Type NM-B and NMC cables shall be permitted to be used in all buildings without complying to Article 334.10 and 12. Substantiation: NM-B and NMC provide no increase hazard on construction sites provided it's installed properly.</p> <p>27. Comm 16.45 retain (1,2,3) delete "(4) "</p> <p>28. Comm 16.46 retain part of (1) Read as (1) Stand-by emergency power of a type recognized by NEC 700.12 (A), (B), (C), and (E) shall be provided as a source of supply for required exit lights emergency light, and egress lighting required by the International Building Code.</p>	<p>24. Disagree. The ceiling area and classification for areas where natural gas is used as a fuel is a new addition to the NEC. There is no history of any problems in this type of installation.</p> <p>25. Disagree. The repeal of Comm 16.41 is proposed. The submitter has provided no substantiation for the change.</p> <p>26. Disagree. There is not adequate justification for the proposed change. The NEC allows these cable methods for temporary installations as covered by Article 527.</p> <p>27. Agree. The requirements of Comm 16.45 (4) are covered by chapters Comm 61 to 65. The proposed rules have been revised to include the repeal of Comm 16.45 (4).</p> <p>28. Agree in part. Comm 16.46 was repealed effective 7/1/02 because allowable sources of emergency power are specified in the IBC as adopted in chapters Comm 61 to 65.</p>

DEPARTMENT OF COMMERCE
 SUMMARY OF PUBLIC HEARING COMMENTS AND AGENCY RESPONSE

Clearinghouse Rule No.: 02-072		Hearing Location: Madison	
Rule Number: Chapter Comm 16		Hearing Date: June 28, 2002	
Relating to: Electrical Construction			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
8	Dan Costello Eaton Cutler-Hammer Milwaukee, WI	Repeal of Comm 16.12. Against the elimination of all arc-fault protection requirements.	See Exhibit No. 7, comment and response no. 13.

**DEPARTMENT OF COMMERCE
SUMMARY OF PUBLIC HEARING COMMENTS AND AGENCY RESPONSE**

Clearinghouse Rule No.: 02-072		Hearing Location: Eau Claire	
Rule Number: Chapter Comm 16		Hearing Date: July 2, 2002	
Relating to: Electrical Construction			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
9	James Pierce IBEW 14 Trego, WI	Opposed to Section 30. A change in the 1999 NEC 430.102 wording was necessary to protect workers that might violate safety rules and attempt to work a motor circuit hot rather than walk the long distances back to the motor control center to properly lock out/tag out the motor circuit. Exceptions were also needed. This is a significant change for the benefit of worker safety. The intent is also to disqualify any so-called portable devices that are easily removed. NEC 430.102 (B) should be adopted in its entirety.	Agree in part. The addition of the requirement for a permanently installed locking mechanism has been made to the proposed rules. Also, see response to John Cyr comment 1.
Oral	David Northup Local Union 388 IBEW Stevens Point, WI	Opposed to the exception in Comm 16.38. This is a safety issue for electricians and all craft and maintenance personnel as well as the public.	See response to John Cyr comment 1.
10	Richard Rodell City of Eau Claire Eau Claire, WI	1. Comm 16.03 (4) Repairs. This section will no longer allow requiring a service to be in compliance with current code if it has been damaged and needs repair. For example, someone could repair a 50-amp residential service and not have to bring it up to 100 amperes or do anything with the grounding. If a hazard exists, the Department may require the installation be brought into compliance, but not the local inspector. 2. Comm 16.215 Common area branch circuits. Concerned with deleting service upgrades for 2-family only on a common meter; this should not be taken out of the code. The house meter requirement was removed from the PSC code when the NEC adopted the rule. The following wording is suggested: "Electrical service for 2-family dwellings only. Where the common area load does not exceed 300 volt-amperes, installation of common area metering will not be required." This would not require a separate meter for small loads such as basement lights. The 300 volt-amps is based on NEC 422.31.	1. Agree. This section is not intended to require the upgrade of electrical systems when they are repaired, unless a hazard exists as determined by the Department. An electrical system can be repaired based on the effective code when it was installed. 2. Disagree. The PSC has requirements for separate metering of tenant spaces. The Department does not regulate electrical metering. Also, see Exhibit No. 7 comment and response no. 14
11	Thomas K. Bowe IBEW Local Union 14 Eau Claire, WI	Opposed to section Comm 16.38 exception, which reverts this section of the code book for 2002 back to the 1999 code section.	See response to John Cyr comment 1.

**DEPARTMENT OF COMMERCE
SUMMARY OF PUBLIC HEARING COMMENTS AND AGENCY RESPONSE**

Clearinghouse Rule No.: 02-072		Hearing Location: Eau Claire	
Rule Number: Chapter Comm 16		Hearing Date: July 2, 2002	
Relating to: Electrical Construction			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
12	Dean Licht IBEW Eau Claire, WI	There are many IBEW members that have voiced their opposition to the proposed change to Comm 16.38 exception. They feel it would create an unsafe condition while servicing the equipment.	See response to John Cyr comment 1.
13	Bryan Schroder North Central Technical College IBEW Local 388 Merrill, WI	1. Comm 16.294 Underground installations. The NEC requirements should be left in place. The warning ribbon is a minor inconvenience when installed, but can save lives as well as downtime when future work is done. 2. Comm 16.38 Location. For safety reasons, the NEC 430.102 should be accepted as written in the NEC. The necessity for disconnects in sight of work areas is apparent.	1. Disagree. Deleting the warning ribbon requirement does not prevent someone from using it. The increased use of boring equipment has all but eliminated the trenching of service conductors. Utilities generally install the underground service conductors and these rules do not apply to their installations. 2. See response to John Cyr comment 1.
14	Josef Guir IBEW LU 388 Aniwa, WI	Opposed to proposed change to Comm 16.38 Location [NEC 430.102]. Would support changes to clarify requirement for local disconnect.	See response to John Cyr comment 1.

**DEPARTMENT OF COMMERCE
SUMMARY OF PUBLIC HEARING COMMENTS AND AGENCY RESPONSE**

Clearinghouse Rule No.: 02-072		Hearing Location: Mailed in comments	
Rule Number: Chapter Comm 16		Hearing Date: N/A	
Relating to: Electrical Construction			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
15	Stanley J. Folz Folz Electric, Inc. Roscoe, IL	Implementing Comm 16.38 will be taking a step backward. Having local disconnects can prevent injuries and deaths. The exceptions were crafted for specific relief from 430.102 (B). Comm 16.38 has no safeguards against abuse of the exception, especially in a residential environment. There are no special circumstances in Wisconsin that would be different from any other state that would require Wisconsin making this modification.	See response to John Cyr comment 1.
16	William H. King, Jr. U.S. Consumer Product Safety Commission Washington, D.C.	Wisconsin should adopt the AFCI protection in NEC 210.12, 2002 edition. Since 1995, AFCI devices were developed by industry and thoroughly evaluated by CPSC engineering staff. AFCI circuit breakers are readily available for \$30. Current AFCI devices represent a major improvement in circuit protection to guard against the risk of fire. Their installation in homes is a cost effective step to reduce fire deaths attributed to home wiring.	See Exhibit No. 7, comment and response no. 13.
17	Paul Welhak IBEW Local Union 494 Milwaukee, WI	Concerned about the exception to Comm 16.38 Location; this proposal would not have made it to public hearings had it been brought before the advisory council. This proposal takes us backwards not forward. It removes a safeguard that protects not only electricians but all persons who toil daily by machinery that can injure, maim and permanently disable workers. This proposal flies in the face of the NEC and should not be approved.	See response to John Cyr comment 1.
18	Gregory Storkson Capital City Local Union 159, IBEW Madison, WI	Concerned about the exception to Comm 16.38 Location. This proposal removes a safeguard that protects members and other service people in this industry. This change was not brought before the advisory council. The change could cause safety problems and should not be adopted.	See response to John Cyr comment 1.
19	Joe K. Simon Simon Electric Construction Co., Inc. New Richmond, WI	Comm 16.38 makes a dangerous industry even more dangerous. We must make safety as convenient as possible. This proposal must be defeated.	See response to John Cyr comment 1.

DEPARTMENT OF COMMERCE
SUMMARY OF PUBLIC HEARING COMMENTS AND AGENCY RESPONSE

Clearinghouse Rule No.: 02-072		Hearing Location: Mailed in comments	
Rule Number: Chapter Comm 16		Hearing Date: N/A	
Relating to: Electrical Construction			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
20	Mike Forister National Electrical Manufacturers Assn Cheyenne, WY	The Department should adopt the 2002 NEC without amendment, including Article 210.12, the AFCI requirement. AFCIs have been thoroughly tested under UL standard 1699, and have recorded over a billion hours of in-use experience with no reported nuisance tripping. AFCIs will prevent fires and save lives.	See Exhibit No. 7, comment and response no. 13.
21	Richard R. Therkelsen IBEW Local Union 430 Racine, WI	Opposed to the addition of an exception to Comm 16.38. The proposed exception eliminates a safeguard against electrocution and serious injury to everyone working on or around machinery and equipment. Safety must take precedence over any other interest in this matter.	See response to John Cyr comment 1.
22	Paul Wehnak IBEW Local Union 494 Milwaukee, WI	1. NEC 100 Definition of structure. There are many examples of outdoor installations that will not be covered by the exceptions 1 thru 4 of NEC 225.32. It is not the intent of the NEC to consider these installations to meet the definition of structure and to be provided with disconnects suitable for service equipment rating. The definition of structure in NEC 100 was added for consistency with the IBC definition of structure. The following 2 notes should be added: NOTE #1: For the purpose of NEC 225 Part II structures as defined in Article 100 shall apply to those occupancies classified in the Wisconsin Enrolled Commercial Building Code Vol. I Comm 62 Chapter 3, Section 302 Classification. Portions of structures shall not be considered separately, other than defined in Comm 16:17 (2) (a) (Building). NOTE #2: For the purpose of NEC 225 Part II canopies shall not be considered a structure. 2. NEC 430.102 (B) Exception (a). The word impracticable is subjective and ambiguous, and will result in inconsistent interpretation. FPN 1 provides reasonable guidance for determining introduction of increased hazard. Having a disconnect within sight of a motor presents a safer installation for not only electricians but all other personnel. Comm 16.38 should substitute the wording of NEC 430.102 (B) Exception (a) to read: "Where such a location of the disconnecting means introduces additional or increased hazards to persons or property."	1. See response to John Cyr comment 3. 2. See response to John Cyr comment 1.

**DEPARTMENT OF COMMERCE
SUMMARY OF PUBLIC HEARING COMMENTS AND AGENCY RESPONSE**

Clearinghouse Rule No.: 02-072		Hearing Location: Mailed in comments	
Rule Number: Chapter Comm 16		Hearing Date: N/A	
Relating to: Electrical Construction			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
23	John Cyr NECA/JATC Milwaukee, WI	Submitted same comments as Exhibit No. 22.	See responses to Exhibit No. 22.
24	Bob Fahey Evansville, WI	<p>1. Comm 16.38. Supports this section. NEC 430.102 (B) exception needs to be clarified. The current wording leaves too much gray area and does not provide a clear and concise decision for the installer and/or inspector.</p> <p>2. NEC 547.9 (A). This section creates a hazard without requiring overcurrent protection at the site isolating device for the service conductors which run underground from the center pole on a farm. This protection is not needed for above ground conductors because they are in plain view. Comm 16.438 has a similar requirement for irrigation systems at the service point; both of these areas are important to have overcurrent protection. Add to NEC 547.9 (A): "When the site isolating switch is located at a central location and where the conductors are routed underground to the multiple structures, the site isolating switch shall be service rated and contain overcurrent protection sized for the service conductors which supplies the site isolating switch. The feeder conductors which supply the various structures may comply with 240.21 (5)."</p>	<p>1. Comment noted.</p> <p>2. Disagree. The NEC adequately covers this issue. A general discussion of this proposal with the advisory council yielded no substantiation to differ from the NEC.</p>
25	Bob Fahey Wisconsin Chapter IA EI Madison, WI	The NEC wording for arc-fault circuit-interrupters applies to new construction, protects wiring within the walls but does not address existing dwelling units and electrical wiring that may not comply with today's standard. Incorporate the following changes in Comm 16: 1. Delete Comm 16.21. 2. Substitute the following for NEC 210.12 (B): All 125-volt, single phase, 15- and 20-ampere receptacle outlets installed in dwelling unit bedrooms shall be protected by a listed arc-fault circuit-interrupter. 3. Add the following to NEC 406.3 (D): (4) Arc-Fault Circuit-Interrupters. Arc-fault circuit-interrupter protection shall be provided where replacements are made at receptacle outlets that are required to be so protected elsewhere in this code.	See Exhibit No. 7, comment and response no. 13.

DEPARTMENT OF COMMERCE
SUMMARY OF PUBLIC HEARING COMMENTS AND AGENCY RESPONSE

Clearinghouse Rule No.: 02-072		Hearing Location: Mailed in comments	
Rule Number: Chapter Comm 16		Hearing Date: N/A	
Relating to: Electrical Construction			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
26	Ronald E. Maassen Lemberg Electric Co., Inc. Wauwatosa, WI	Comm 16.38 is a step backwards. Most safety minded manufacturing companies have required disconnects next to their motors for some time. The definition of a structure is causing major concern among inspection groups as well as electrical contractors. Submitted same comments as Exhibit No. 22.	See responses to Exhibit No. 22.
27	Robert D. Rayburn Milwaukee Chapter NECA Milwaukee, WI	The NEC erred in adopting the IBC definition of the term structure without realizing its full, but unintended impact. Submitted same comments as Exhibit No. 22, comment 1.	See response to Exhibit No. 22, comment 1.
28	Robert D. Rayburn Milwaukee Chapter NECA Milwaukee, WI	The inclusion of proposed Comm 16.38 to create exceptions to standard disconnect procedures greatly increases the likelihood that a serious injury or death will occur. Submitted same comments as Exhibit No. 22, comment 2.	See response to Exhibit No. 22, comment 2.



State of Wisconsin \ Department of Commerce

RULES in FINAL DRAFT FORM

Rule No.: Chapter Comm 16

Relating to: Electrical Construction

Clearinghouse Rule No.: 02-072

The Department of Commerce proposes an order to repeal ss. Comm 16.12 (1), Comm 16.295, Comm 16.35, Comm 16.41, Comm 16.437, Comm 16.44, and Comm 16.45 (4); to renumber ss. Comm 16.23, Comm 16.24 (1) (a), and Comm 16.24 (2) (b); to renumber and amend ss. Comm 16.12 (2), Comm 16.24 (1) (b), Comm 16.24 (2) (c), Comm 16.34, Comm 16.355, and Comm 16.36; to amend ss. Comm 16.02 (2) (e), Comm 16.065, Comm 16.17 (2) (a), Comm 16.25 (1) (a) (intro.), Comm 16.25 (6), Comm 16.25 (7) (title), (intro.) and (b), Comm 16.26 (title), (intro.) and (2), Comm 16.30 (1), Comm 16.33, Comm 16.395, and Comm 16.42 (1); to repeal and re-create ss. Comm 16.03 (3), Comm 16.11 (1), Comm 16.20, and Comm 16.42 (2); and to create ss. Comm 16.03 (4), Comm 16.155, Comm 16.17 (3), Comm 16.215, Comm 16.23, Comm 16.275, Comm 16.294, Comm 16.37, Comm 16.38, Comm 16.39 (1), Comm 16.392, Comm 16.438, Comm 16.49, and Comm 16.52; relating to electrical construction.

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.

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, and mines. 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 2002 edition of the NEC. 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 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 2002 edition of the NEC. For example, because of changes in NEC 300.7 (A) of the 2002 NEC relating to sealing of raceways exposed to different temperatures, section Comm 16.295 is being deleted.
2. Revising the rules relating to the application of the code by clarifying the requirements relating to existing installations and by adding requirements for repairs. [Comm 16.03 (3) and (4)]
3. Deleting the NEC definition of "structure". [Comm 16.17 (3)]

4. Adding a requirement in dwelling units for installation of GFCI protection at sinks where receptacles are installed to serve countertop surfaces and are located within 6 feet of the sink. [Comm 16.20 (1)]

5. Adding requirements in other than dwelling units for installation of GFCI protection at outdoor receptacles and at sinks where receptacles are installed to serve countertop surfaces and are located within 6 feet of the sink. [Comm 16.20 (2)]

6. Allowing the option of supervision by a Wisconsin professional engineer, architect or designer of electrical systems when calculating branch-circuit, feeder and service sizes. [Comm 16.23]

7. Revising the supplemental electrode rule by requiring 2 supplemental made electrodes for all installations, not just for one- and 2-family dwellings. [Comm 16.26 (2)]

8. Adding a requirement for a supplemental equipment grounding conductor for a metallic raceway installed in direct contact with earth, in concrete slabs or floors poured on earth, or in exterior concrete walls below grade. [Comm 16.275]

9. Deleting the NEC requirement for a warning ribbon to identify the location of underground service conductors that are not encased in concrete. [Comm 16.294]

10. Revising the requirements for motor disconnects by retaining the 1999 NEC wording and adding a modification. [Comm 16.38]

11. Adding a clarification for who is a qualified person to monitor and service a transformer installation over 600 volts. [Comm 16.39 (1)]

12. Deleting the NEC exception allowing mechanical ventilation to be used to exempt the area up to 18 inches above the floor from being classified a hazardous area in commercial garages. [Comm 16.392]

13. Adding a requirement for a service disconnecting means with overcurrent protection at the service point for electrically driven or controlled irrigation machines. [Comm 16.438]

14. Adding a new rule to clarify that a person can request the Department to perform an electrical plan review. [Comm 16.52]

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>
Terry Fameree	International Association of Electrical Inspectors
David Hansen	Dept of Agriculture, Trade and Consumer Protection
Ronald L. Jahnke	NECA, Wisconsin Chapter
Ronald Janikowski	International Association of Electrical Inspectors
Charles L. Johansen	Wisconsin Builders Association

James D. Loock
Richard Lynes
Ronald E. Maassen
Robert Molde
Ken Peterson
Paul Welnak

Wisconsin Public Service Commission
Associated Builders and Contractors of Wisconsin
NECA, Milwaukee Chapter
Wisconsin Utilities Association
Wisconsin Electric Cooperative Association
Wisconsin State AFL-CIO

SECTION 1. Comm 16.02 (2) (e) is amended to read:

Comm 16.02 (2) (e) Installations for the purpose of street or area lighting owned and under exclusive control of electrical utilities or municipal electric departments where located outdoors on property owned or leased by the utility; on or along public highways, streets, roads or similar public thoroughfares; or outdoors on private property by established rights of ~~easement~~ such as easements, where such installations are in compliance with ch. PSC 114.

SECTION 2. Comm 16.03 (3) is repealed and re-created to read:

Comm 16.03 (3) EXISTING INSTALLATIONS. Existing electrical installations shall conform to the electrical code that applied when the installations were installed. An existing electrical installation may be required to be brought into compliance with the current code's requirements by the department and within the time period determined by the department when a hazard to life, health or property exists or is created by the installation.

SECTION 3. Comm 16.03 (4) is created to read:

Comm 16.03 (4) REPAIRS. Repairs to electrical installations shall conform to the electrical code that applied when the installations were installed. A repair may be required to be brought into compliance with the current code's requirements by the department and within the time period determined by the department when a hazard to life, health or property exists or is created by the repair.

SECTION 4. Comm 16.065 is amended to read:

Comm 16.065 Fees. Fees for petitions for variance, electrical plan review and electrical inspections issued under this chapter shall be submitted as specified in ch. Comm 2.

SECTION 5. Comm 16.11 (1) is repealed and re-created to read:

Comm 16.11 (1) MATERIALS. Materials, equipment and products which 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.

SECTION 6. Comm 16.12 (1) is repealed.

SECTION 7. Comm 16.12 (2) is renumbered Comm 16.12 and amended to read:

Comm 16.12 Adoption of standards by reference. The National Electrical Code, ~~NEC-1999~~ NEC-2002, subject to the changes, additions or omissions specified in subch. III, is hereby incorporated by reference into this chapter.

SECTION 8. Comm 16.155 is created to read:

**ARTICLE 80 –
ADMINISTRATION AND ENFORCEMENT**

Comm 16.155 Administration and enforcement [NEC 80]. NEC Article 80 does not apply in Wisconsin.

SECTION 9. Comm 16.17 (2) (a) is amended to read:

Comm 16.17 (2) (a) "Building" means a structure which stands alone or which is separated from adjoining structures by fire walls having not less than a 3-hour ~~fire-resistive~~ fire-resistance rating with all openings in the wall protected with 3-hour ~~fire-rated~~ rated fire door assemblies.

Note: Electrical generating equipment is not considered a structure.

Note: See chs. Comm 61 to 65 for ~~fire-resistive~~ fire-resistance standards.

SECTION 10. Comm 16.17 (3) is created to read:

Comm 16.17 (3) OMISSIONS. The definition of "structure" in NEC Article 100 does not apply in Wisconsin.

SECTION 11. Comm 16.20 is repealed and re-created to read:

Comm 16.20 Ground-fault circuit-interrupter protection for personnel [NEC 210.8].

(1) DWELLING UNITS [NEC 210.8 (A)]. This is a department rule in addition to the requirements of NEC 210.8 (A) (1) to (8):

Sinks, where receptacles are installed to serve countertop surfaces and are located within 6 feet of the outside edge of the sink, except that a single receptacle or a duplex receptacle for 2 appliances located within dedicated space for each appliance that, in normal use, is not easily moved from one place to another and that is cord-and-plug connected in accordance with NEC 400.7 (A) (6), (A) (7), or (A) (8) shall not be required to have ground-fault circuit-interrupter protection.

(2) OTHER THAN DWELLING UNITS [NEC 210.8 (B)]. Substitute the following wording for NEC 210.8 (B):

In units other than dwelling units, all 125-volt, single phase, 15- and 20-ampere receptacles installed in the following locations shall have ground-fault circuit-interrupter protection for personnel:

(a) Bathrooms.

(b) Kitchens, where the receptacles are installed to serve the countertop surfaces.

(c) Outdoors, except as provided in subds. 1. to 3.

1. Receptacles that are not readily accessible and are supplied from a dedicated branch circuit for electric snow-melting or deicing equipment shall be permitted to be installed in accordance with the applicable provisions of Article 426.

2. A single receptacle or a duplex receptacle for 2 appliances located within dedicated space for each appliance that, in normal use, is not easily moved from one place to another and that is cord-and-plug connected in accordance with NEC 400.7 (A) (6), (A) (7) or (A) (8) shall not be required to have ground-fault circuit-interrupter protection.

3. A receptacle installed in a parking area for the purpose of connecting motor vehicle block/tank heaters shall not be required to have ground-fault circuit-interrupter protection.

(d) Commercial garages, repair areas and storage areas where electrical diagnostic equipment, electrical hand tools, or portable lighting equipment are to be used.

(e) Sinks, where receptacles are installed to serve countertop surfaces and are located within 6 feet of the outside edge of the sink, except that a single receptacle or a duplex receptacle for 2 appliances located within dedicated space for each appliance that, in normal use, is not easily moved from one place to another and that is cord-and-plug connected in accordance with NEC 400.7 (A) (6), (A) (7), or (A) (8) shall not be required to have ground-fault circuit-interrupter protection.

SECTION 12. Comm 16.215 is created to read:

Comm 16.215 Common area branch circuits [NEC 210.25]. This is a department rule in addition to the requirements of NEC 210.25:

For service upgrades for existing 2-family dwellings only, separation of common area branch circuits will not be required.

SECTION 13. Comm 16.23 is renumbered Comm 16.205.

SECTION 14. Comm 16.23 is created to read:

**ARTICLE 220 --
BRANCH-CIRCUIT, FEEDER, AND SERVICE CALCULATIONS**

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

Branch-circuit loads shall be computed as shown in NEC 220.3 (A) through (C), 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) when energy codes restrict lighting loads to an amount lower than the table values.

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

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.

SECTION 15. Comm 16.24 (1) (a) is renumbered Comm 16.24 (1).

SECTION 16. Comm 16.24 (1) (b) is renumbered 16.24 (5) and amended to read:

Comm 16.24 (5) (title) CLEARANCES OVER ROADWAYS, WALKWAYS, RAIL, WATER, AND OPEN LAND [NEC 225.60]. Substitute the following wording for the note to NEC ~~225.18~~ 225.60 (C):

Note: For clearances of conductors of over 600 volts, see ch. PSC 114.

SECTION 17. Comm 16.24 (2) (b) is renumbered Comm 16.24 (2).

SECTION 18. Comm 16.24 (2) (c) is renumbered 16.24 (6) and amended to read:

Comm 16.24 (6) (title) CLEARANCES OVER BUILDINGS AND OTHER STRUCTURES [NEC 225.61]. Substitute the following wording for the note to NEC ~~225.19~~ 225.61 (B):

Note: See ch. PSC 114 regarding clearances of conductors of over 600 volts and for prohibition of constructing dwellings under or near overhead lines.

SECTION 19. Comm 16.25 (1) (a) (intro.) is amended to read:

Comm 16.25 (1) (a) (intro.) These are department informational notes to be used under NEC 230.2 ~~(a)~~ (intro.):

SECTION 20. Comm 16.25 (6) is amended to read:

Comm 16.25 (6) MAXIMUM NUMBER OF DISCONNECTS [NEC 230.71]. These ~~exceptions~~ are department rules in addition to the ~~exception~~ requirements in NEC 230.71 ~~(a)~~ (A):

(a) ~~Exception No. 1~~. Individual dwelling units shall have a single main disconnecting means for each metered service, except services rated 300 amperes or more shall be permitted to have 2 service disconnecting means.

(b) ~~Exception No. 2~~. Additional disconnecting means installed on individual dwelling units as permitted for different uses, such as for different rate schedules, permitted by ~~NEC 230.2 Exception No. 6~~ NEC 230.2 (D), shall be allowed to remain should subsequent changes in use occur.

(c) ~~Exception No. 3~~. Not more than 6 circuit breakers shall be permitted to be installed in existing dual or split bus service panelboards installed prior to February 1, 1968.

SECTION 21. Comm 16.25 (7) (title), (intro.) and (b) are amended to read:

Comm 16.25 (7) (title) RATING OF DISCONNECT SERVICE DISCONNECTING MEANS [NEC 230.79]. This is a department rule in addition to the requirements of NEC 230.79 ~~(c)~~:

(b) *Two- or multi-family dwellings*. Except as provided in par. (c), for 2-family or multi-family dwellings, the service equipment shall have a rating of not less than 150 amperes, 3-wire or 4-wire. Where the combined rating of all service disconnecting means is 150 amperes or larger, the service or feeder equipment rating for each dwelling unit shall have a rating of not less than ~~50~~ 60 amperes.

SECTION 22. Comm 16.26 (title), (intro.) and (2) are amended to read:

Comm 16.26 (title) Grounding electrode system installation [NEC ~~250.50~~ 250.53]. These are department rules in addition to the requirements of NEC ~~250.50 (a)~~ 250.53 (D) (2):

(2) TWO SUPPLEMENTAL ELECTRODES. ~~For one- and two-family dwellings, where~~ Where the supplemental electrode required by NEC ~~250.50 (a)~~ 250.53 (D) (2) consists of made electrodes specified in NEC ~~250.52~~ 250.52 (A) (5), not less than 2 supplemental made electrodes shall be installed.

SECTION 23. Comm 16.275 is created to read:

Comm 16.275 Types of equipment grounding conductors [NEC 250.118]. This is a department rule in addition to the requirements of NEC 250.118:

A metallic raceway installed in direct contact with earth, in concrete slabs or floors poured on earth, or in exterior concrete walls below grade shall be augmented with a supplemental equipment grounding conductor identified in NEC 250.118 (1). This supplemental conductor shall be sized in accordance with NEC 250.122. An aluminum equipment grounding conductor used for this purpose shall be insulated.

SECTION 24. Comm 16.294 is created to read:

Comm 16.294 Underground installations [NEC 300.5]. NEC 300.5 (D) (3) does not apply in Wisconsin.

SECTION 25. Comm 16.295 is repealed.

SECTION 26. Comm 16.30 (1) is amended to read:

Comm 16.30 (1) ADJUSTMENT FACTORS [NEC 310.15 (B) (2)]. This is a department exception in addition to the exceptions specified in NEC 310.15 (B) (2) (a):

Exception No. ~~5~~ 6: The derating factors shown ~~above~~ in Table 310.15 (B) (2) (a) do not apply to branch circuits supplying an individual dwelling unit.

SECTION 27. Comm 16.33 is amended to read:

**ARTICLE ~~348~~ 358 --
ELECTRICAL METALLIC TUBING: TYPE EMT**

Comm 16.33 (title) ~~Use [NEC 348-4]~~ Uses permitted [NEC 358.10]. This is a department rule in addition to the requirements of NEC ~~348-4~~ 358.10:

Electrical metallic tubing shall not be used in direct contact with earth, in concrete slabs or floors poured on earth, or in exterior concrete walls below grade.

SECTION 28. Comm 16.34 is renumbered 16.32 and amended to read:

ARTICLE ~~370~~ 314 --
OUTLET, DEVICE, PULL AND JUNCTION BOXES,
CONDUIT BODIES; ~~AND FITTINGS; AND MANHOLES~~

Comm 16.32 Conductors entering boxes, conduit bodies, or fittings [NEC ~~370-17~~ 314.17] This is a department exception in addition to the requirements of NEC ~~370-17 (b) and (c)~~ 314.17 (B) and (C):

Exception. ~~Cable~~ Non-metallic 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.

SECTION 29. Comm 16.35 is repealed.

SECTION 30. Comm 16.355 is renumbered 16.325 and amended to read:

Comm 16.325 Outlet boxes [NEC ~~370-27~~ 314.27]. This is a department rule in addition to the requirements of NEC ~~370-27 (a)~~ 314.27 (A):

In a dwelling unit, a ceiling outlet box installed for use as a lighting fixture outlet in a habitable room or kitchen and located where a ceiling fan could be installed shall be a type listed for ceiling fan support.

SECTION 31. Comm 16.36 is renumbered 16.31 and amended to read:

ARTICLE ~~373~~ 312 --
CABINETS, ~~AND CUTOUT BOXES,~~ AND METER SOCKET ENCLOSURES

Comm 16.31 (title) ~~Conductors entering cabinets or cutout boxes [NEC ~~373-5]~~~~ Cabinets, cutout boxes, and meter socket enclosures [NEC 312.5]. This is a department exception in addition to the requirements of NEC ~~373-5 (c)~~ 312.5 (C):

Exception. ~~Cable~~ Non-metallic 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.

SECTION 32. Comm 16.37 is created to read:

ARTICLE 400 --
FLEXIBLE CORDS AND CABLES

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).

SECTION 33. Comm 16.38 is created to read:

**ARTICLE 430 --
MOTORS, MOTOR CIRCUITS, AND CONTROLLERS**

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.

SECTION 34. Comm 16.39 (1) is created to read:

Comm 16.39 (1) OVERCURRENT PROTECTION [NEC 450.3]. This is a department rule in addition to NEC Table 450.3 (A) Note 3:

The qualified person can be either an employee at that location or an employee contracted for this purpose who is readily available.

SECTION 35. Comm 16.392 is created to read:

**ARTICLE 511 --
COMMERCIAL GARAGES, REPAIR AND STORAGE**

Comm 16.392 Classifications of locations [NEC 511.3]. Section NEC 511.3 (B) (1) Exception does not apply in Wisconsin.

SECTION 36. Comm 16.395 is amended to read:

**ARTICLE 514 --
~~GASOLINE MOTOR FUEL DISPENSING AND SERVICE STATIONS FACILITIES~~**

Comm 16.395 Circuit disconnects [NEC ~~514-5~~ 514.11]. Substitute the following wording for NEC ~~514-5~~ (b) 514.11 (B):

At attended self-service stations, emergency controls as specified in NEC ~~514.5 (a)~~ 514.11 (A) shall be installed at a location acceptable to the authority having jurisdiction. Where such controls are located over 100 feet from any dispenser, a two-way means of communication shall be provided between all dispenser locations and the attendant's area.

Note: The disconnect requirements found in NEC 514.11 and NEC 514.13 are required by ch. Comm 10 for combustible liquid dispensers such as diesel fuel.

SECTION 37. Comm 16.41 is repealed.

SECTION 38. Comm 16.42 (1) is amended to read:

Comm 16.42 (1) (title) ~~SERVICE EQUIPMENT, SEPARATELY DERIVED SYSTEMS, FEEDERS, DISCONNECTING MEANS, AND GROUNDING [NEC 547.8] ELECTRICAL SUPPLY TO BUILDINGS OR STRUCTURES FROM A DISTRIBUTION POINT [NEC 547.9].~~ ~~(a)~~ This is a department informational note to be used under NEC ~~547.8 (a) and (c)~~ 547.9 (A):

Note: A pole-top disconnect is recognized as the service disconnecting means required by this section.

SECTION 39. Comm 16.42 (2) is repealed and re-created to read:

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

SECTION 40. Comm 16.437 is repealed.

SECTION 41. Comm 16.438 is created to read:

**ARTICLE 675 --
ELECTRICALLY DRIVEN OR CONTROLLED IRRIGATION MACHINES**

Comm 16.438 Disconnecting means [NEC 675.8]. This is a department rule in addition to the requirements of NEC 675.8:

A service disconnecting means with overcurrent protection shall be provided at the service point in accordance with NEC 230 VI.

SECTION 42. Comm 16.44 is repealed.

SECTION 43. Comm 16.45 (4) is repealed.

SECTION 44. Comm 16.49 is created to read:

**ARTICLE 702 --
OPTIONAL STANDBY SYSTEMS**

Comm 16.49 Optional standby systems [NEC 702]. This is a department rule in addition to the requirements of NEC 702:

Where an outdoor housed generator set is equipped with a readily accessible disconnecting means located within sight of the building or structure supplied, an additional disconnecting means shall not be required where ungrounded conductors pass through the building or structure.

SECTION 45. Comm 16.52 is created to read:

Comm 16.52 Electrical plan review. Upon request, the department may perform electrical plan review for dwellings, public buildings, places of employment, and electrical services.

END

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.
