Proposed Changes 2014 NEC®

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Presentation Objectives

- Review significant changes proposed for the 2014 NEC
- Provides information related to accepted proposals in the first stage of the 2014 NEC development cycle.
- Comments to proposals are encouraged (visit www.nfpa.org for an electronic comment form).

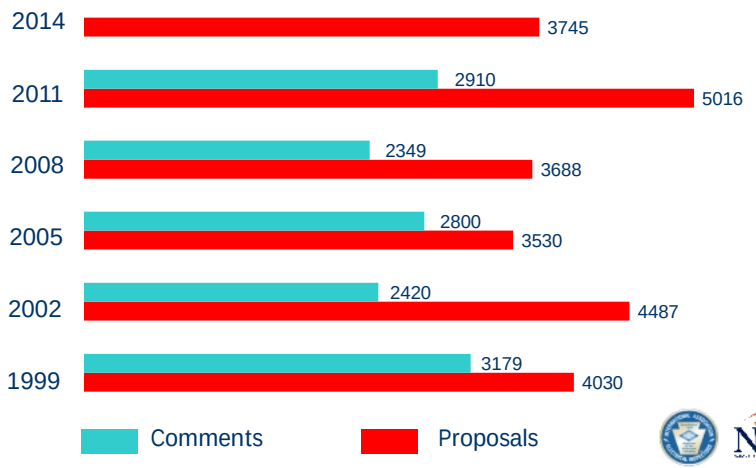
2

General Information

- NEC Code-Making Panels met from January 8 through 21, 2012.
- There were 3745 proposals submitted and acted on (includes CMP proposals)
- Less than the 2011 NEC development cycle.

3

Activity by Cycle Since 1999



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Proposed New Articles

- Article 393 [302] Low Voltage Suspended Ceiling Power Distribution Systems
- Article 64X Modular Data Centers
- Article 750 Energy Management Systems
- Article 7XX Direct Current Micro grids (Rejected in ROP stages)

5

Code-Wide Changes

- Revised, deleted or relocated Informational Notes throughout the NEC.
- Revisions in the NEC Style Manual require INs to follow the rule they pertain to [3.1.3].
- Consistent lockable disconnecting means requirements.
- Requirements for DC systems and wiring incorporated throughout the NEC.

6

Code-Wide Changes

- Proposals to change the 600 Volts threshold to 1000 Volts throughout the NEC.
- Some TCs accepted, others rejected.
- Required Correlating Committee action.

7

Code-Wide Changes

- Proposals to expand the use of acronyms (mostly with wiring methods)
- Most proposals were rejected due to nonconformance with the NEC Style Manual.

8

Code-Wide Changes

- Proposals to incorporate the term "switchgear" throughout the NEC where appropriate and in rules apply to switchgear.
- In some instances the CMPs did not accept the word "power" with the use of the word "switchgear."
- In some instances the CMPs did not accept the use of the term "metal-enclosed" with the term "switchgear."
- Revised definition of "Switchgear" in Article 100.

9

Code-Wide Changes

- Proposals to change the term "equipment grounding conductor" to the term "equipment bonding conductor."
- Most CMPs rejected the proposals and referred to the Panel actions on similar proposals in the 2005 NEC development cycle.
- CMP-6 acted in favor of this proposal in this phase of the process.

10

Code-Wide Changes

- Multiple proposals have been accepted to relocate definitions to Article 100 in accordance with Section 2.2.2.1 of the NEC Style Manual.
- Definitions from other articles still remain under the responsibility of the applicable CMP.

11

Article 90

Introduction

12

90.8(B) Number of Circuits in Enclosures

- Proposal 1-19
- Revision removes the words “in one circuit”
- Clarifies that a short circuit or ground fault condition is not limited to any one circuit within raceways or enclosures addressed by this section.

13

Chapter 1

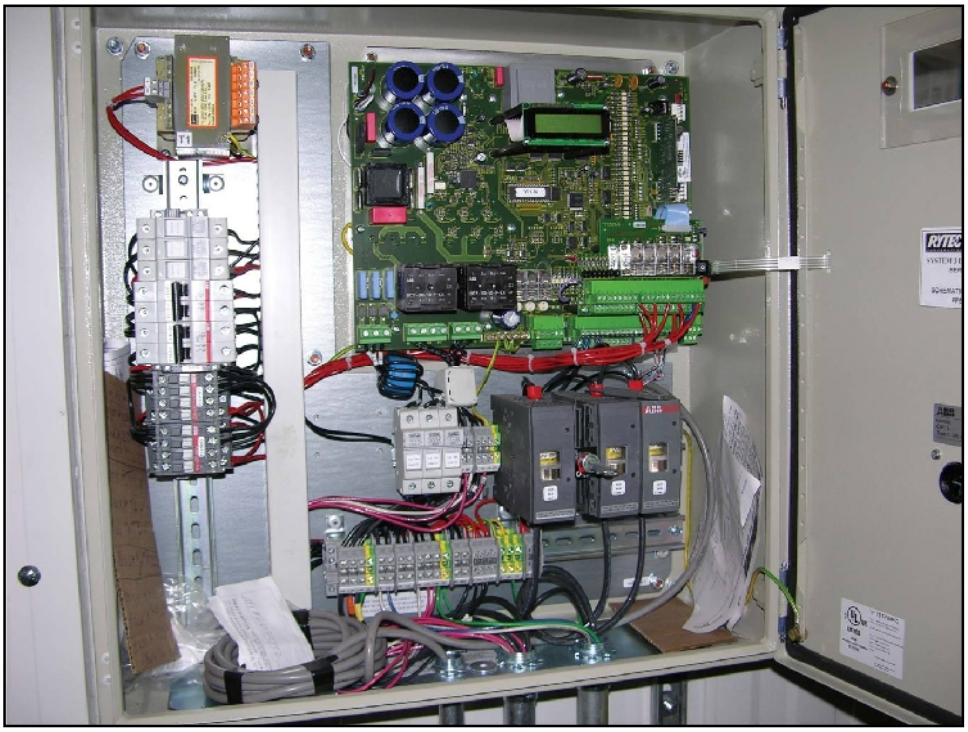
General

15

100 Control Circuit

- Proposal 11-8
- Revision and relocation of the definition of the term “motor control circuit.”
- As revised the word “motor” is removed from the definition making the term “control circuit” a new definition in the NEC that applies to all control circuits, not just motor control circuits.

16



100 Device

- Proposal 1-31a
- Revision adds the words “other than a conductor” to the definition.
- Clarifies that while a device typically carries current and is a conductive path in the circuit, it is not a conductor as defined and referenced elsewhere in the NEC.

18

100 Premises Wiring System

- Proposal 1-61
- New informational note added to the existing definition.
- Provides examples of a premises wiring system for additional clarification such as batteries, photovoltaic systems, interconnected power sources, stand-alone generators, and so forth.

19

Article 100 Retrofit Kit

- Proposal 18-9
- New definition of the term “Retrofit Kit” added to Article 100.
- New definition applies to LED listed retrofit kits used for luminaires and signs as referenced by requirements in Articles 410 and 600.

21

Article 100 Switchgear

- Proposal 9-7
- Revision of definition of the term metal-enclosed switchgear removes the words “metal-enclosed and power.”
- Addresses all types of switchgear and new informational note includes a list of switchgear types to which the revised definition applies.

22

Article 100 Switchgear

- An assembly completely enclosed on all sides and top with sheet metal (except for ventilating openings and inspection windows) and containing primary power circuit switching, interrupting devices, or both, with buses and connections. The assembly may include control and auxiliary devices. Access to the interior of the enclosure is provided by doors, removable covers, or both.

23

Article 100 Switchgear

- Informational note: All switchgear subject to NEC requirements is metal enclosed.
- Switchgear rated below 600 (or 1000) volts may be identified as “Low-Voltage Power Circuit Breaker Switchgear”.
- Switchgear rated over 1000 volts may be identified as “Metal-Enclosed Switchgear” or “Metal-Clad Switchgear”.
- Switchgear is available in non-arc-resistant or arc-resistant constructions.

24

Section 110.14(C)(1) Equipment Provisions

- Proposal 1-98
- Revision adds a reference to Table 400.5.
- Clarifies that the ampacities of cords and cables covered in Table 400.5 are limited by the temperature rating of the terminations.

26

110.16 Arc-Flash Hazard Warning

- Proposal 1-105
- Revision adds the words “or factory” to the rule.
- Clarifies that the marking could be applied in the field or at the factory by a manufacturer.

27

Section 110.17 Working Space Marking

- Proposal 1-110
- New section added to require working space identification.
- Specifies that the required working space for equipment needs to be marked on the equipment or adjacent to the equipment to readily identify the working space that is to be kept clear.
- Marking could be on the equipment, on a wall, or the floor.

29

Section 110.21(B) Field Marking

- Proposal 1-114
- New subdivision (B) adds requirements for warning, caution, or danger, markings, labels, or signs required by the NEC.
- Markings, signs, or labels need to meet the requirements in ANSI Z535.4.

30

Section 110.24 Available Fault Current

- Proposal 1-121
- New informational note added.
- Clarifies that the available fault current markings required by 110.24 are for equipment rating purposes only and not for arc-flash hazard analysis as required by NFPA 70E.

31

110.25 Lockable Disconnecting Means

- Proposal 1-130
- New section provides consistent requirements for Code rules that require a lockable disconnecting means.
- The proposal has several companion proposals to remove text from all sections that provide the specific requirements for lockable disconnecting means.
- Correlating Committee assigned task group to complete this work started in the NEC 2011 development cycle.

32

Section 110.2X Readily Accessible

- Proposal 1-131
- New section to require all AFCI and GFCI protection devices to be readily accessible.
- Proposal globally addresses the NEC readily accessible requirements for both GFCI and AFCI requirements.

34

Section 110.26(C)(3) Personnel Doors

- Revision reduces the ampere value “1200”to “800” amperes.
- Clarifies the requirements for panic hardware are required for large equipment with an 800-ampere rating or greater.
- This section has been renumbered as 110.27 to incorporate a new Section 110.25.

35

Section 110.26(C)(3) Personnel Doors

- Proposal 1-145
- Section revised to include only the term “panic hardware.”
- Revision to this section removes the terms “simple pressure plates” and other devices that are normally latched but are released under simple pressure.
- Change results in consistency with applicable Building Codes that only use the term “panic hardware.”

36

Section 110.33(A)(3) Personnel Doors

- Proposal 1-169a
- Section revised to include only the term “panic hardware.”
- Revision to this section removes the terms “simple pressure plates” and other devices that are normally latched but are released under simple pressure.
- Change results in consistency with Building Codes that only use the term “panic hardware.”

38

Chapter 2

Wiring and Protection

39

200.4(B) Multiple Circuits

- Proposal 5-29
- New subdivision (B) titled “Multiple Circuits” has been added to this section.
- Requires grouping the common neutral conductor with its associated ungrounded conductors when contained in the same enclosure.
- The new exception relaxes the requirement where the grouping is obvious.

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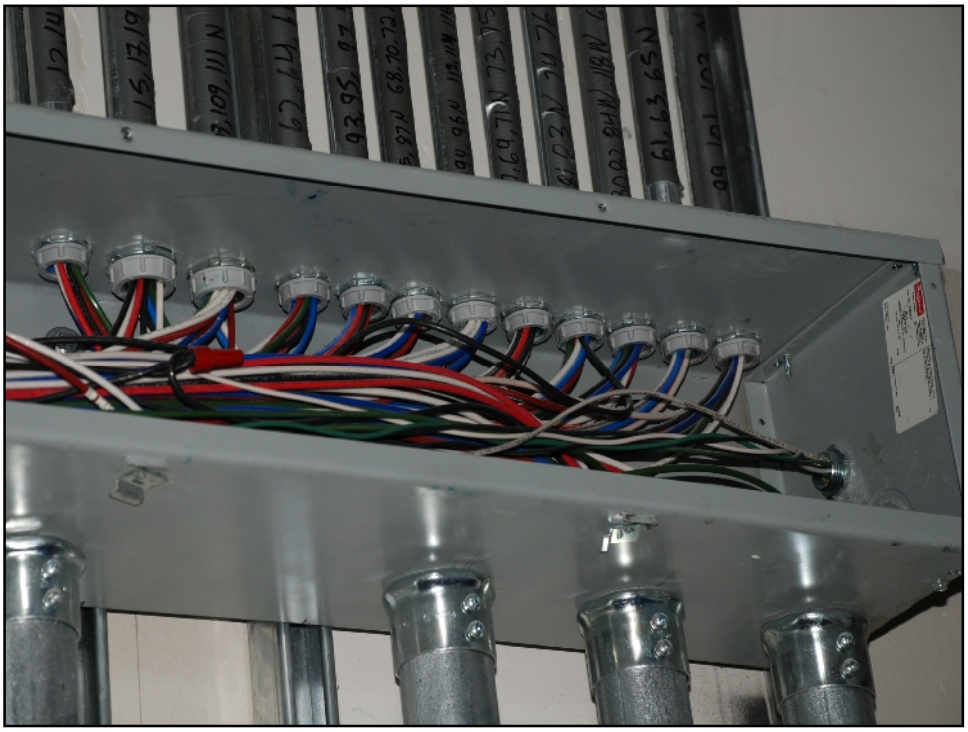

Section 210.5(C) Identification of Ungrounded Conductors

- Proposal 2-23
- New list item (2) added and provides branch circuit identification requirements for DC systems.
- Applies to conductors in sizes 6 AWG and smaller.
- Red for positive conductors and black for negative conductors.

42

Section 210.6(F) 600 Volts DC Between Conductors

- Proposal 2-26
- New subdivision (F) added to address DC circuits in dwellings that are supplied by micro grids.
- Circuits complying with the requirements of 7xx (new) [Direct Current Micro grids - see companion proposal from TCC DC Working Group] and that are provided with both ground-fault and arc-fault detection. (380-volt DC systems for residential)

43

Section 210.8(A)(9) Bathtubs or Shower Stalls

- Proposal 2-46
- New list item (9) added to Section 210.8.
- (9) Bathtubs or Shower Stalls - Where receptacles are installed within 1.8 m (6 ft) of the outside edge of the bathtub or shower stall."

44

Section 210.8(A)(10) Laundry Areas

- Proposal 2-47
- New list item (10) added to Section 210.8(A).
- (10) Laundry Areas now required to have GFCI protection for 125-volt, single phase, 15- and 20-ampere receptacles.

45

Section 210.12(A)(2) Arc-Fault Circuit Interrupter Protection

- Proposal 2-92
- Revision recognizes use of circuit breakers or outlet devices at the first outlet in the circuit.
- Four specific conditions must be met to apply (2) for outlet AFCI devices.

46

Section 210.12(A)(2) (continued)

- (a) The branch circuit over current protection device shall be a listed circuit breaker having an instantaneous trip not exceeding 300 amperes.
- (b) The branch circuit wiring shall be continuous from the overcurrent device to the outlet branch circuit AFCI.
- (c) The maximum length of wiring from the branch circuit overcurrent device to first outlet not to exceed 15.2 m (50 ft) for a 14 AWG or 21.3 m (70 ft) for a 12 AWG conductor.
- (d) The first outlet box in the branch circuit shall be identified.

47

Section 210.12(A)

- Proposal 2-82a
- Revision to 210.12(A)
- Change adds kitchen branch circuits and outlets to the AFCI protection requirements.
- Continues the progression toward “whole-house” protection originally sought by CPSC in the 1999 NEC development cycle.

48

Section 210.13 Ground-Fault Protection of Equipment

- Proposal 2-125
- New Section 210.13 Ground-Fault Protection of Equipment
- Clarifies that each branch circuit disconnect rated 1000 amperes or more and installed on solidly grounded wye electrical systems of more than 150 volts to ground, but not exceeding 600 volts phase-to- phase, shall be provided with ground-fault protection of equipment in accordance with the provisions of 230.95.

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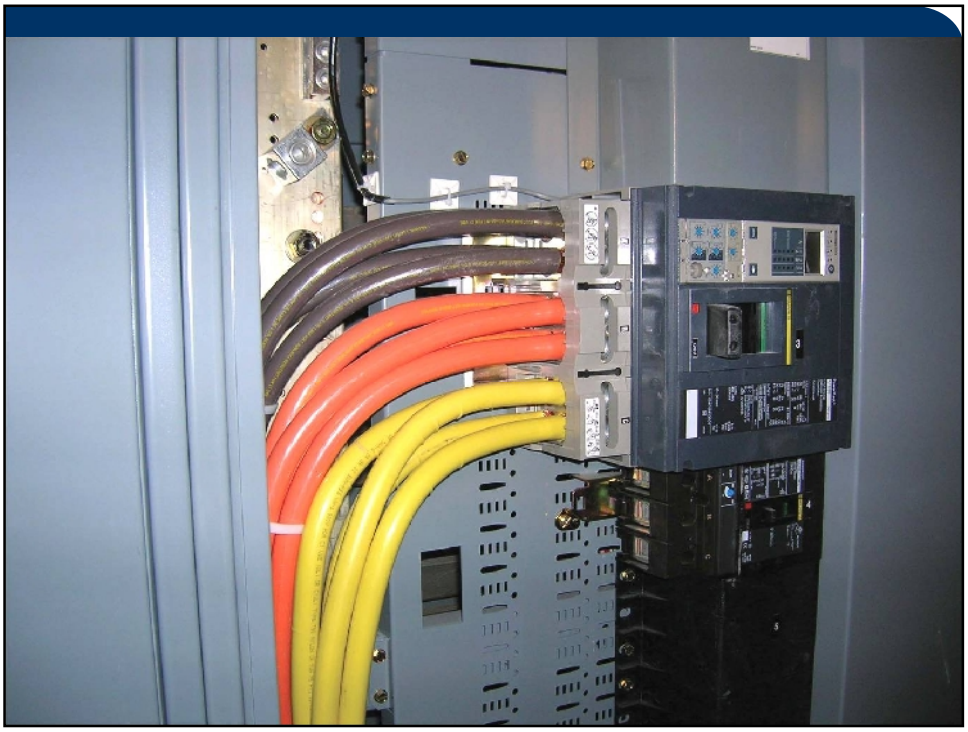


Section 210.17 Electric Vehicle Branch Circuit

- Proposal 2-128
- New section 210.17 added to Article 210.
- 210.17 Electric Vehicle Branch Circuit. Outlet(s) installed for the purpose of charging electric vehicles shall be supplied by a separate branch circuit. This circuit shall have no other outlets.
- Informational Note. See 625.2 for the definition of "Electrical Vehicle".

52

53

Section 210.64 Electrical Room or Area

- Proposal 2-191
- New Section 210.64 added to Article 210 and exception for one- and two-family dwelling units.
- A 125-volt, single-phase, 15- or 20-ampere receptacle outlet required an accessible location for servicing of electrical equipment and/or connection of electrical testing and recording equipment. The receptacle shall have GFCI protection and be located on the same level and within the room or area within 15 m (50 ft) of the electrical equipment.

54

Table 220.3 Electric Vehicle Charging Equipment

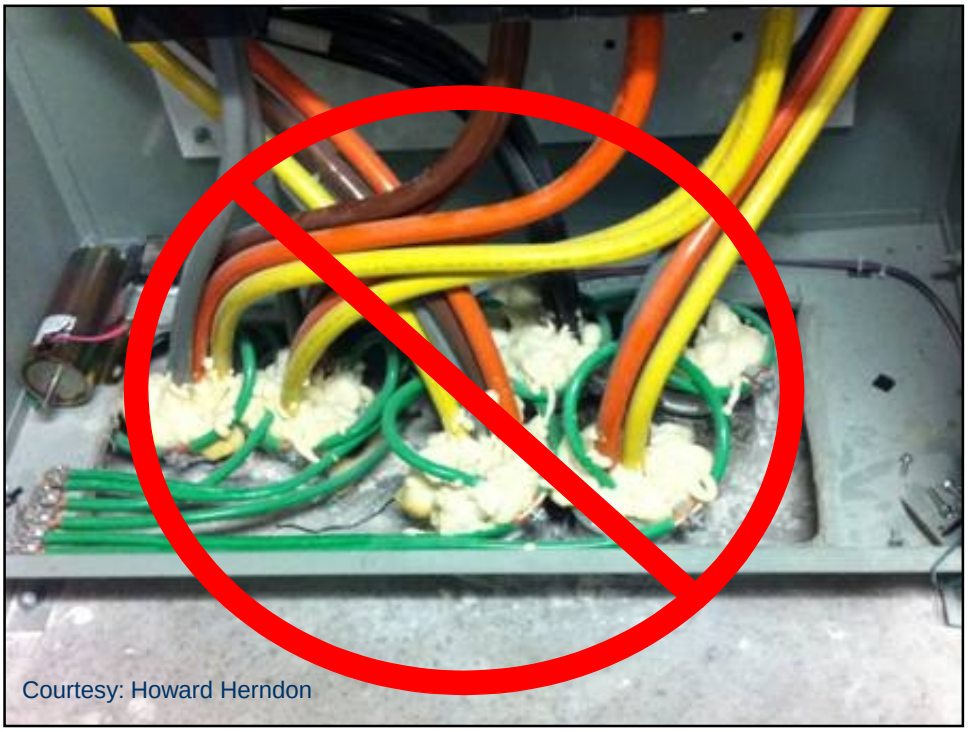
- Proposal 2-219
- New line item added to Table 220.3
- Adds Electric Vehicle Charging Equipment and a reference to Section 625.14 to this table.
- Clarifies branch circuit calculation requirements for circuits supplying EV charging equipment.

56

Section 225.27 Raceway Seal

- Proposal 4-38
- Revision to Section 225.7 aligns this section with 230.8.
- Sealant is required to be identified for use with conductor insulation and bare conductors.

57



Courtesy: Howard Herndon

Section 230.44 Cable Trays

- Proposal 4-133
- Revision adds spacing intervals for labels.
- Revised to include spacing interval for service conductor warning labels (not to exceed 10 feet).

59

Section 240.11 Oversized Ungrounded Conductors

- Proposal 10-18
- New section 240.11 added titled: Oversized Ungrounded Conductors
- New section requires marking on conductors where they are adjusted in size for voltage drop reasons or conductor correction factor purposes.

60

Section 240.87 Noninstantaneous Trip

- Proposal 10-53a
- Revised for usability and changed into subdivisions.
- Revision clarifies the rule applies only to circuit breakers that are intentionally delayed under short-circuit conditions and does not have an instantaneous trip setting, and does not have an over ride setting higher than the arc current. Proposal 10-56 adds the term "function engaged" to this rule.

61

Section 250.21(C) Marking

- Proposal 5-66
- Revision to current marking requirements in subdivision (C).
- Revision adds specific words for the Caution Sign as follows:

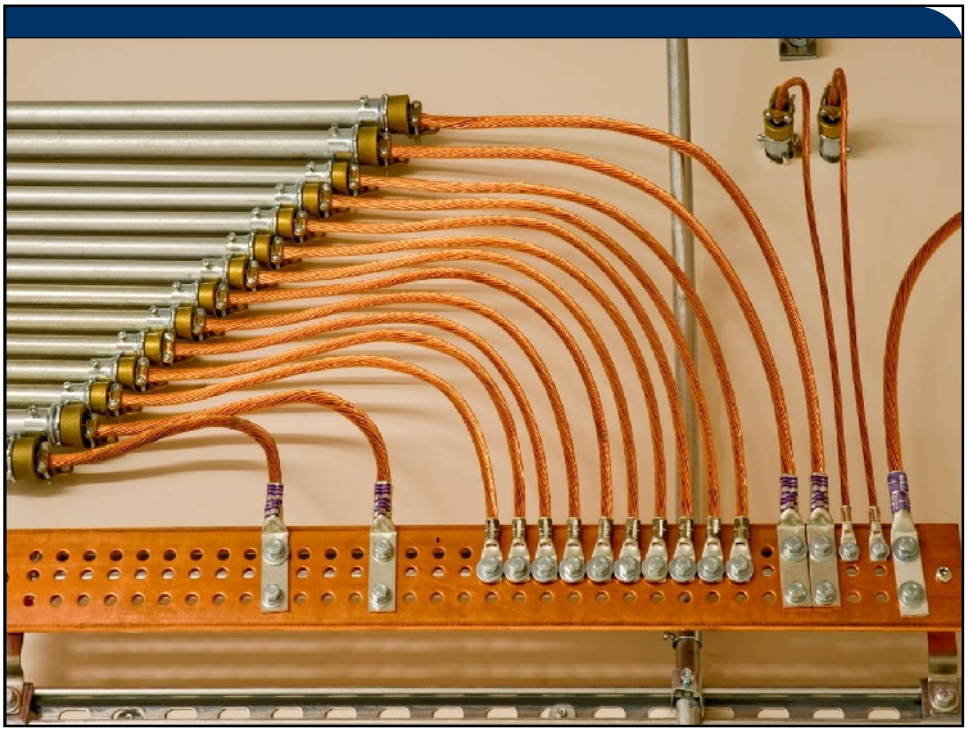
  "Caution Ungrounded System Operating - ____ Volts Between Conductors"

62

Section 250.64(D)(1)(3)

- Proposal 5-120
- Revised to address busbar lengths.
- Revision adds requirement that the busbar be of sufficient length to connect all grounding electrode conductors and or bonding jumpers or conductors that must be attached.

63



Sections 250.66(A) and (B) Sole Connections to Electrodes

- Proposals 5-131 and 5-135
- Revisions add clarity to both subdivisions (A) and (B).
- Revised to clarify the intent of the term "sole connection“ as used in this section as it clearly is related to the type of electrodes addressed in this section and not the quantity of electrodes.

65

Section 250.102(C) – New Table

- Proposal 5-42
- New table provides minimum sizes for other than grounding electrode conductors.
- New table used for minimum sizing of line-side bonding jumpers, grounded conductors, main bonding jumpers, system bonding jumpers. References to this table have been inserted in appropriate sections.

66

Section 250.122(B) Increased in Size

- Proposal 5-199
- Revision to this section for clarification.
- Revision clarifies that the increase in size is from the minimum conductor size required for the load served.

67

Section 250.122(F) Conductors in Parallel

- Proposal 5-201a
- Rules for equipment grounding conductors in paralleled installations have been revised.
- Revision clarifies that EGC installed with paralleled conductors is not required to be larger than the largest ungrounded conductor in each cable or raceway of the parallel set.

68

Section 250.166 Size of DC Grounding Electrode Conductor

- Proposal 5-222
- Revised to clarify maximum sizes required for GEC of DC systems.
- Revision clarifies maximum size required for grounding electrode conductors installed for DC systems to comply with 250.166 and not required to exceed the values in Table 250.66. (Use NEC Table 250.66 for maximum size)

70

Section 250.167 DC Ground Fault Detection

- Proposal 5-233
- New section requiring ground fault detection.
- New requirements for ground fault detection on DC systems.
- Requirements address grounded systems, ungrounded systems, and marking rules for each.

71

Section 250.192 Grounding and Bonding of Fences and Other Metal Structures

- Proposal 5-241
- New section added to Article 250, Part X.
- New rules for bonding and grounding fences and other metal structures around substations.

72

Chapter 3

Wiring Methods and Materials

75

Article 300 General Requirements for Wiring Methods and Materials

- Proposal 3-8
- Title has been revised to add the words “General Requirements”
- Similar revisions to Section 300.1 (Scope).
- The title change is appropriate and better reflects what is covered by Article 300. Specific rules for each wiring method follow Article 300 in the respective Chapter 3 articles.

76

Section 300.6(A)(1) Protected from Corrosion Solely by Enamel

- Proposal 3-51
- New informational note added to list item (1).
- New IN clarifies that field-cut threads are those not cut in the factory where the product is manufactured and listed.

77

Section 310.10(H)(2) Conductor Characteristics

- Proposal 6-15
- A new list item (6) expands the requirements for parallel conductor installations.
- (6) When paralleled in ferrous metal enclosures or raceways, conductors shall be grouped to prevent inductive heating.
- Where conductors are paralleled in ferrous metal enclosures or raceways, overheating and current imbalance are directly related to grouping.

78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Section and Table 310.15(B)(7)

- Proposal 6-49a
- Deletion of Table 310.15(B)(7) and revision to Section 310.15(B)(7).
- Revision deletes the table and replaces it with a provision allowing a .83 reduction in ampacity for dwelling services and feeder conductors. The reduction is the same as what was permitted by former Table 310.15(B)(7) but presented in a user friendly format. A new example is included in Annex D to describe how to apply the revised rule.

81

Section 314.16(A) Box Volume Calculations

- Proposal 9-37a
- Revision clarifies volume allowances for canopies.
- Revision clarifies luminaire canopy volume marked on the canopy is not included in the box volume.

82

Section 314.25 Covers and Canopies

- Proposal 9-55
- Section revised by adding a new last sentence.
- Revision clarifies that drywall screws are not permitted for used on box covers or other equipment fastened to the box.
- Cover and canopy screws need to be suitable for this purpose. Similar revisions included in Article 404 and 406.

83

Section 314.27(A)(2) Ceiling Outlets

- Proposal 9-62
- Revision adds information required to be marked on boxes.
- Revision requires the luminaire weight to be supported to be marked on the interior of the box.

84

Section 324.41 Floor Coverings

- Proposal 7-23
- Revision in maximum size requirements.
- Revision increases size of carpet squares from 36 inches square to 39.37 inches square for covering flat conductor cable.
- Standardization (increasing size) of modular carpet square size allows the use of modular carpet products and manufacturers that standardize sizes based on SI Units.

85

Section 330.30(D) Unsupported Cable

- Proposal 7-31
- New list item (3) added to this section.
- New list item (3) permits MC cable to be installed unsupported in lengths not exceeding 3 feet for vibration reasons or flexibility.

86

Section 348.30(A) Exc. No. 4

- Proposal 8-54
- Revision to the exception for clarification.
- Revision clarifies that flexible metal conduit fittings are permitted as a support means for the purpose of applying the exception.

87

Section 350.30(A) Exc. No. 4

- Proposal 8-57
- Revision to the exception for clarification.
- Revision clarifies that liquidtight flexible metal conduit fittings are permitted as a support means for the purpose of applying the exception.

88

Section 350.60 Exception

- Proposal 8-60
- New exception added to this section.
- Exception: Where Air Conditioning or Refrigerating Equipment is part of an industrial, commercial, or institutional installation operating under conditions of maintenance and supervision that ensure that only qualified persons monitor and supervise the system, LFMC shall be permitted to be used as an equipment grounding conductor when installed in accordance with 250.118(6).

90

Section 358.60 Grounding

- Proposal 8-60
- Revision addresses new equipment grounding conductor requirements.
- EMT installed outdoors for HVAC equipment shall include a wire-type equipment grounding conductor. Industrial exception provided by the CMP-8.

91

Section 376.22(B) Adjustment Factors

- Proposal 8-137
- Revision addresses the maximum of 30 current-carrying conductors.
- Revision clarifies that the 30 conductor maximum before application of correction factors applies at any cross section of the wireway.

92

Section 386.120 Marking

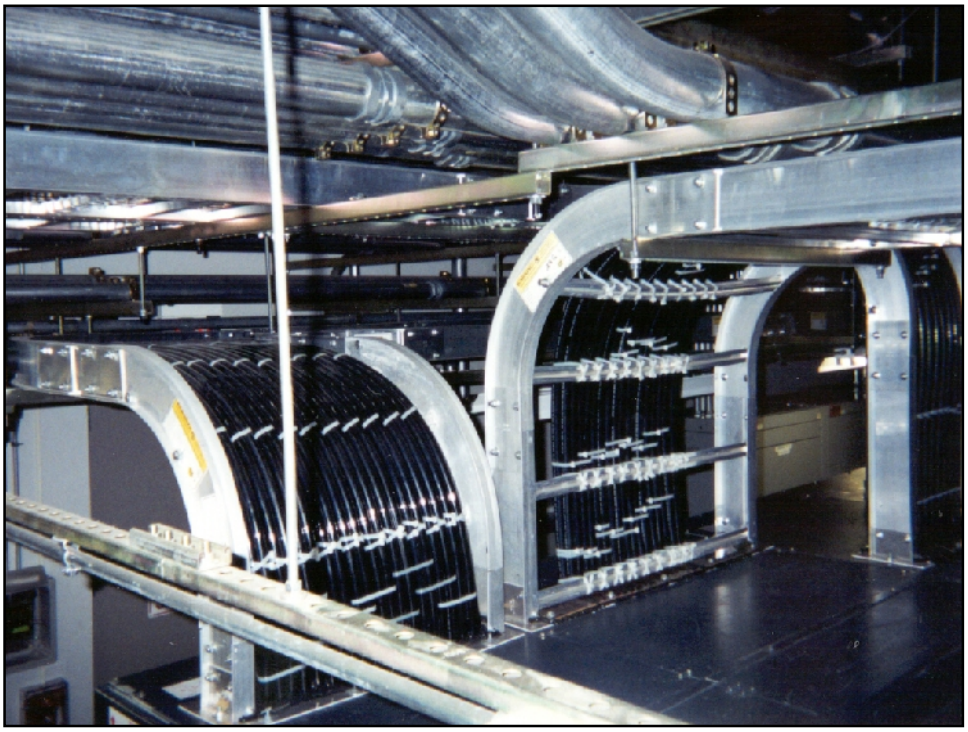
- Proposal 8-154
- New section provides marking requirements for surface nonmetallic raceways.
- New section requires each length of surface metal raceway to be identified and marked according to 110.21 (manufacturers marking requirements).

93

Section 392.18(H) Marking

- Proposal 8-179
- New exception added to this section.
- New exception relaxes the marking requirement (DANGER HIGH VOLTAGE KEEP AWAY) for industrial establishments with conditions of maintenance and supervision and qualified persons service the installation.

94



Chapter 4

Equipment for General Use

Section 400.4 Types

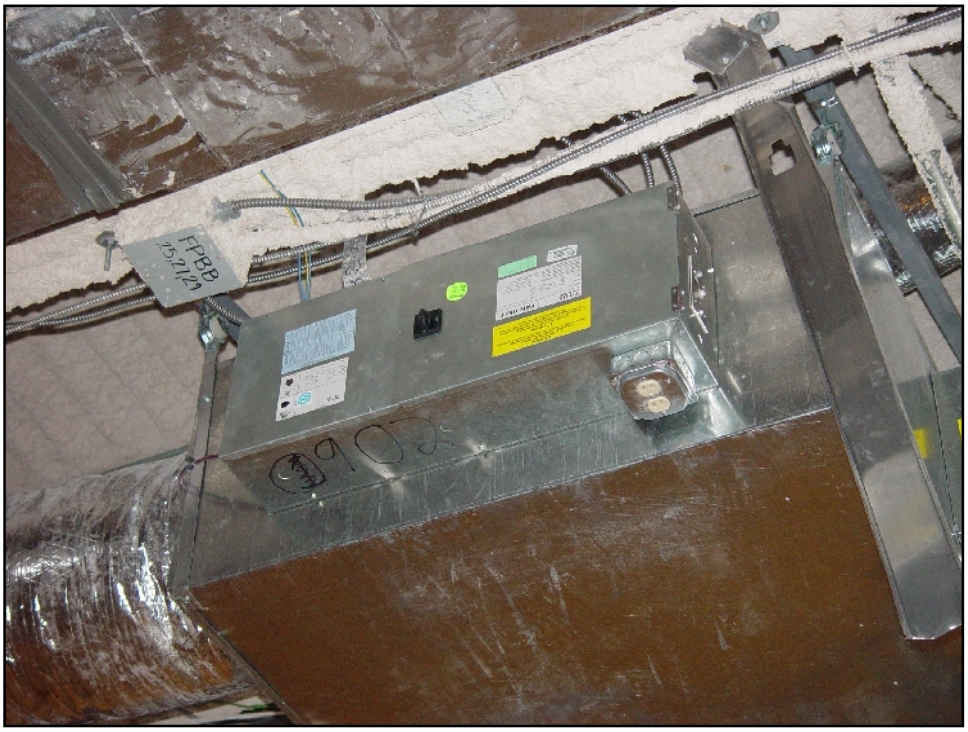
- Proposal 6-86
- Revised to expand the types covered by the rule.
- Revision allows cords and cables other than those listed in Table 400.4 but only by special permission.

97

Section 400.7 Uses Permitted

- Proposal 6-103
- New list item (9) added to Section 400.7.
- New list item recognizes cords for accessory equipment associated with mechanical equipment are now permitted above a ceiling where not prohibited by 300.22.

98



Section 404.2(C) Switches Controlling Lighting Loads

- Proposal 9-87
- A new exception is added to Section 404.2(C).
- The exception exempts switches with integral enclosures in accordance with 300.15(E) that control lighting loads.

100

Section 404.2(C) Switches Controlling Lighting Loads

- Proposal 9-89
- New exception is added to Section 404.2(C). Other exceptions renumbered accordingly.
- New exception relaxes the requirement where multiple switches controlling the same lighting load are installed in in the same area. The grounded circuit conductor must be installed to only one of those switch box locations by the new exception. Door jam switches exempted because closets are not habitable rooms.

101

Section 404.7 Indicating

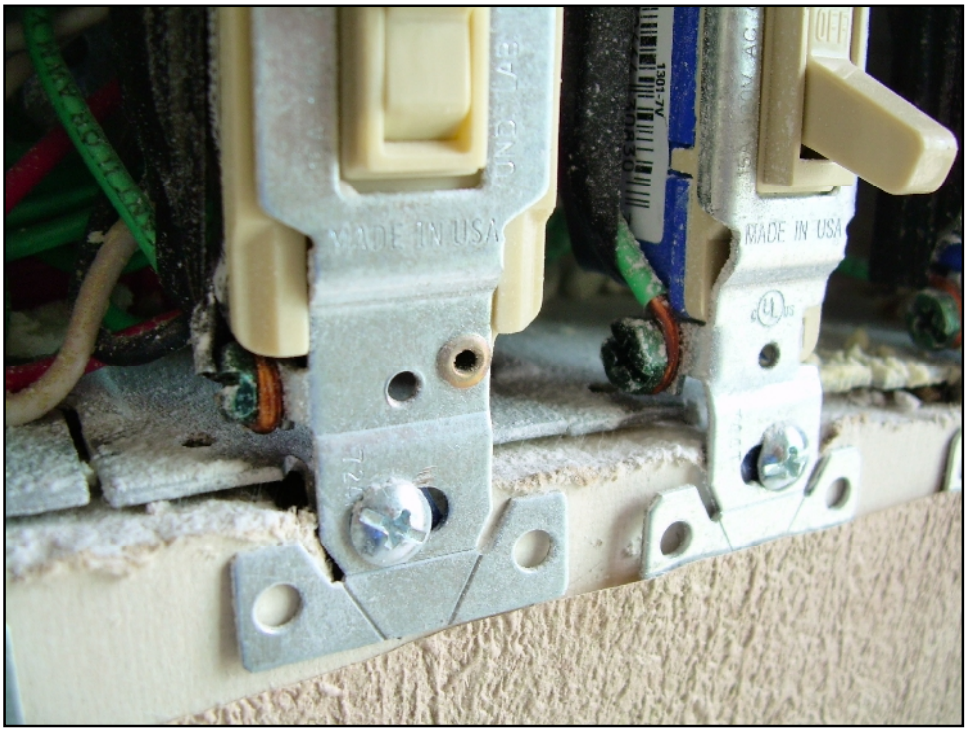
- Proposal 9-96
- Revision to add the word “closed” to this section.
- This revision clarifies that the “closed” or “on” position needs to be the up position for vertical positioned snap switches.

102

Section 404.10(B) Box Mounted

- Proposal 9-98
- Revision addresses switch mounting requirements.
- Revision clarifies that drywall screws are not permitted for use to fasten snap switches to boxes.

103



Section 406.3(E) Controlled Receptacle Marking

- Proposal 18-15
- New subdivision (E) added to Section 406.3.
- New marking symbol required for receptacles controlled by an automatic control device or by an automatic energy management system.
- Change includes new Figure 406.3(E):

105

Section 406.5 Receptacle Mounting

- Proposal 18-30
- Revision addresses receptacle mounting requirements.
- Revision clarifies that drywall screws are not permitted for use to fasten receptacles to boxes.

106

Section 406.5(E) Receptacles Installed in Countertops and Similar Work Surfaces

- Proposal 18-32
- Revision addresses receptacles installed in the face-up position in surfaces.
- Revision expands the restriction of receptacles installed in the face up position to all occupancies, not just dwellings.

107

Section 406.5(F) Receptacles in Seating Areas

- Proposal 18-34
- New Subdivision (F) added to this section.
- New restriction of receptacles installed in seating areas or similar locations unless the assembly is listed for the application.

108

Section 406.15 Receptacles on Dimmer Control

- Proposal 18-53
- New rules for allowing dimmer-controlled receptacles.
- Dimmer Controlled Receptacles. A receptacle supplying lighting loads shall not be connected to a dimmer unless the plug/receptacle combination is a nonstandard configuration type that is specifically listed and identified for each such unique combination.

109

Section 408.3(E) Phase Arrangement

- Proposal 9-110
- Section revised and in list format and adds DC system rules.
- Revision places bus arrangements in a list format and incorporates a requirement for field-marking the bus arrangements for DC systems.

110

Section 410.6 Listing Required

- Proposal 18-59
- Revision adds new listing requirements.
- Revision expands the listing requirement to retrofit kits for lampholders and luminaires.
- New definition of the term "retrofit kit" added to Article 100.

112

Section 410.10(F) Luminaires Installed in or Under Roof Decking

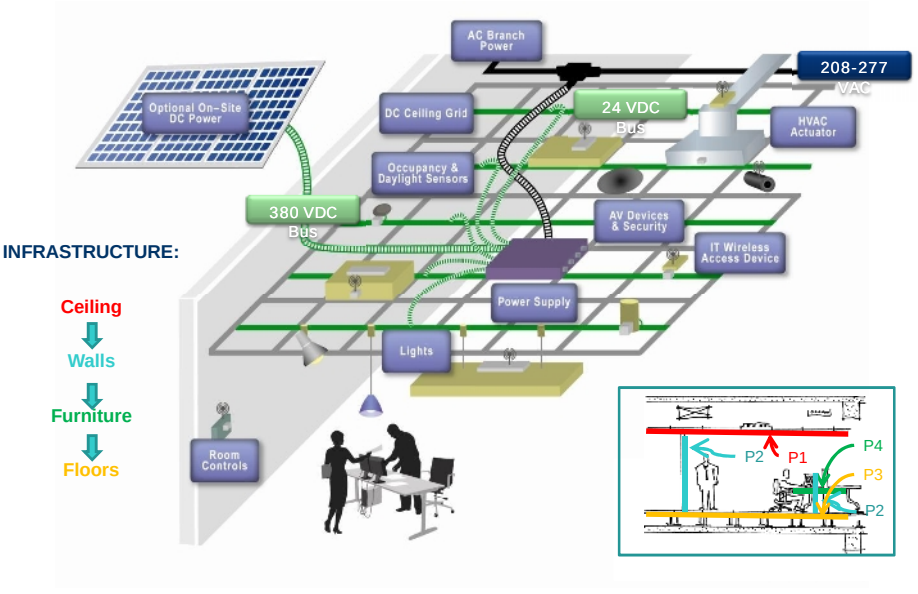
- Proposal 18-66
- New installation restrictions for luminaires.
- New rule addresses protection for luminaires and restricts them from being installed within 1-1/2 inches of the lowest metal deck surface, similar to the rule in 300.4(E).

114

Article 393 [302] Low Voltage Suspended Ceiling Power Distribution Systems

- Proposal 18-10a
- New Article added to Chapter 4.
- New article for low voltage DC equipment (lighting and power) connected to a ceiling grid built for this purpose. Similar characteristics to track lighting.

115



Section 430.52(C)(5) Power Electronic Devices

- Proposal 11-35a
- Revision addresses protection for semiconductors in solid-state motor control systems.
- Revision clarifies that the fuses addressed in this section are "semiconductor fuses" intended to protect bypass contactors, isolation contactors and conductors in a solid-state motor control system.

117

Sections 430.102(A) and (B) Disconnect Locations

- Proposals: 11-45, 11-47, 11-48, 11-50, 11-51, 11-52
- Revision correlates with a new Section 110.25 that addresses rules for lockable disconnecting means.
- Revision references new 110.25 for "lockable disconnecting means" requirements as part of a global change (CC assigned Task Group). Revisions in all Code sections that address lockable disconnecting means requirements.

118

Section 440.9 Grounding and Bonding

- Proposal 11-83
- New rules for equipment grounding conductor (EGC) installations.
- New requirements for equipment grounding conductors in EMT and LFMC installed for HVAC equipment in outdoor locations.
- The EGC must be a wire type as required in 350.60(B) and 358.60(B).

120

Section 445.11 Marking

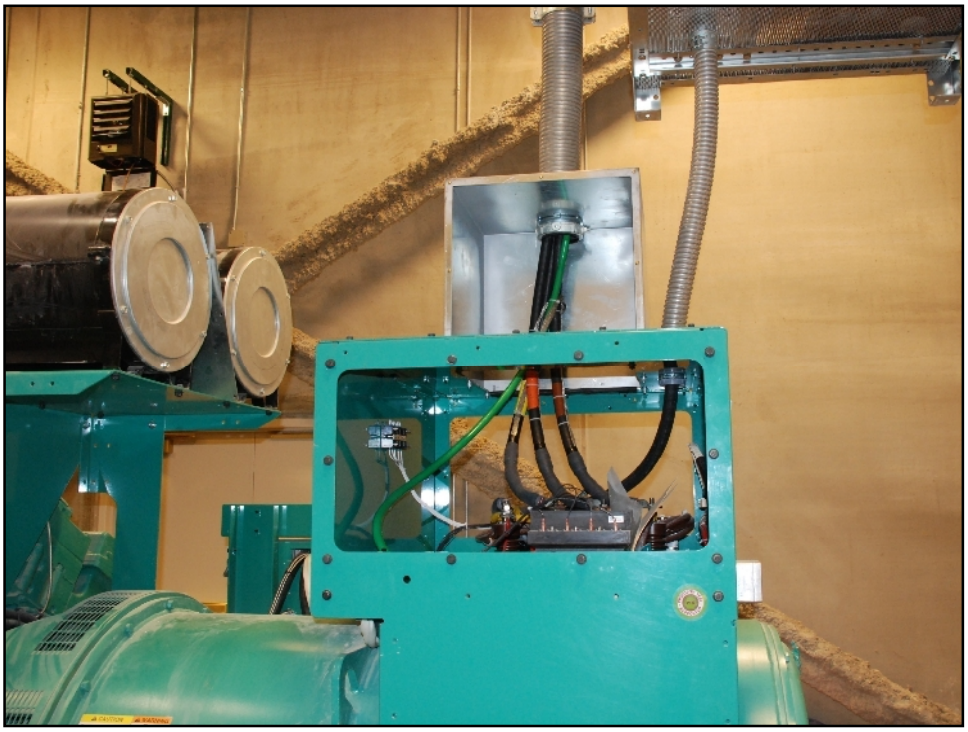
- Proposal 13-10, 13-11
- Revisions add new generator marking requirements.
- Revision requires a marking when the neutral of a generator is bonded to the generator frame.
- Revision requires specific information to be included on the generator (more than 15 KW) nameplate. Power factor, impedances, insulation system class, and time ratings.

121

Section 445.17 Generator Terminal Housings

- Proposal 13-14
- New rules for generator terminal housings.
- New section provides requirements for generator terminal housings similar to 430.12 for motors.
- New exception exempts generators over 600 volts.

123



Section 445.20 GFCI Protection for Receptacles on Portable Generators

- Proposal 13-19
- New GFCI requirements for portable generator receptacles.
- All 125-volt, single-phase, 15- 20-, and 30-ampere receptacle outlets, that are a part of a 15 kW or smaller, portable generator, shall have ground-fault circuit interrupter protection for personnel integral to the generator or receptacle.

125

Section 450.10 Grounding

- Proposal 9-144
- Revision addresses grounding and bonding connections in transformer enclosures.
- New provision incorporates specific requirements for installing an equipment grounding terminal bar in transformer enclosures but not on the vent screen portion.
- An exception addresses transformers with pigtail leads used as the connection means.

126

Section 450.11 Marking

- Proposal 9-145
- Revised into a list format and new list item (5) added.
- New list item (5) requires marking for transformers that can be reverse wired.
- For example: 480 (Primary) – 208Y/120-volt (Secondary) dry-type transformers.

128

Section 480.8(C) Accessibility

- Proposal 13-38
- New rules requiring accessibility.
- New section requires terminals and transparent battery containers required to be readily accessible.

129

Section 480.9(D) Top Terminal Batteries

- Proposal 13-44
- New Subdivision (D) added to Section 480.9.
- New subdivision (D) addresses working space requirements for "Top-Terminal Batteries“ to be in accordance with the manufacturers instructions.

131

Section 490.25 Backfeed

- Proposal 9-165
- New DANGER sign requirements added.
- Revision incorporates a requirement for a sign reading: DANGER — CONTACTS ON EITHER SIDE OF THIS DEVICE MAY BE ENERGIZED BY BACKFEED
- Warns qualified persons of potential back fed terminals in switchgear.

132

501.40 Multiwire Branch Circuits

- Proposal 14-59
- This proposal removes this section and associated exception. The requirements for simultaneous disconnection of all ungrounded conductors of multiwire branch circuits are already provided in 210.4(B).
- Results in an allowance for multiwire branch circuits in hazardous locations where all ungrounded conductors are provided with a means of simultaneous disconnect as required in 210.4(B).

133

Figures 514.3(a) and 514.3(b)

- Proposal 14-237
- The proposed revision changes note 2 following Table 514.3(B)(1) to now refer to Figures 514.3(a) and (b).
- The existing Figure 514.3 would be replaced with Figures 8.3.2(a) and 8.2.3(b) from NFPA 30A.
- The proposed revision results in consistency between NEC Article 514 and NFPA 30A.

134

517.18(B) Patient Bed Location Receptacles

- Proposal 15-36
- This proposed change increases the minimum number of receptacles required from four to eight.
- Aligns with NFPA 99 relative to the increases in quantity of receptacles and normal care patient bed locations.

135

517.19(B) Patient Bed Location Receptacles

- Proposal 15-39
- Section 517.19 addresses critical care patient bed locations. This proposed revision in subdivision (B) changes the required minimum number of receptacles from six to fourteen.
- List item (2) in this section was revised by removing the term “emergency system” and replacing it with the term “critical branch.”
- Aligns with changes in NFPA 99-2012

137

517.19(C) Operating Room Receptacles

- Proposal 15-41
- The minimum number of receptacles required in an operating room is thirty-six of which at least twelve of the thirty-six receptacles must be connected to either the normal system branch or the critical system branch.
- The grounding terminal of these receptacles must be connected to the reference grounding point by means of an insulated copper equipment grounding conductor.

139

517.30(F) Selective Coordination

- Proposal 15-66 - Rejected
- As proposed, the overcurrent devices for the essential electrical system no longer have to be fully selective, but are required only to be selectively coordinated for fault events that exceed 0.1 seconds.
- The NEC® definition of the term “selective coordination” indicates full coordination without mention of time duration of fault events.

141

Article 625 Electric Vehicle Charging and Supply Equipment Systems

- Proposal 12-52
- The article has been renumbered and reorganized to provide a logical sequence and arrangement.
- Notable revisions proposed are revised and new definitions in 625.2, clarification of cord-and-plug connected supply equipment in 625.44, and allowance of automatic load management systems to ensure service or source capacities are not exceeded as proposed in 625.12.

142

Level 1

Courtesy of Leviton

Level 2

DC Fast Charge L2

Courtesy of Eaton Corporation

143

645.27 Selective Coordination

- Proposal 12-143
- New section is titled “Selective Coordination” and requires that all overcurrent devices in critical operations data systems be selectively coordinated with all supply-side overcurrent devices.
- Information provided in the substantiation emphasized the importance of power reliability and continuity of service for reasons of public safety, emergency management, national security, and business continuity.

145

690.12 Arrays on Buildings Response to Emergency Shutdowns

- Proposal 4-253
- This proposed requirement applies to photovoltaic (PV) systems installed on building roofs, and would require that photovoltaic source circuits be de-energized from all sources within 10 seconds of when the utility supply is de-energized or when the PV power source disconnecting means is opened.
- When the source circuits are de-energized, the maximum voltage at the module and module conductors would be limited to 80 volts.

146

700.19 Multiwire Branch Circuits

- Proposal 13-118
- This new section titled “Multiwire Branch Circuits” restricts branch circuits for emergency power or lighting from being part of a multiwire branch circuit.
- Reduces the possibility of loss of power to one or more emergency circuit due to the simultaneous disconnecting means provisions contained in 210.4(B).

148

Article 750 Energy Management Systems

- Proposal 13-180
- This proposed new article is titled “Energy Management Systems” and includes definitions, requirements for alternate power sources, load management provisions, and field marking requirements.
- Energy codes typically include performance requirements for managing and conserving energy in buildings or structures.

149

Example D.1(d) [Applying 310.15(B)(7)]

- Proposal 6-117a
- New example added to Annex D.
- New example describes how to apply revised Section 310.15(B)(7) by using a .83 percentage factor without the former table.

150

Example D.14 Ampacity Calculation for Conductors on a Roof Top Installed in EMT

- Proposal 6-119
- New example added to Annex D.
- New example describes how to perform the rooftop calculations [per 310.15(B)(3)(5)(c) and Table 310.15(B)(3)(c)] for ampacity correction factors.
- Applies to circular raceways (excludes wireways and other raceways).

151

Annex J ADA Standards for Accessible Design

- Proposal 1-191a
- New Annex J added to the NEC (informative annex).
- Annex J addresses usability and provides information about ADA electrical device mounting heights and so forth.

152

Summary

- 3745 NEC proposals have been acted on by the Technical Committees.
- Comments to the proposals are due to NFPA by October 17 5:00 pm EST.
- NFPA encourages participation in this process though submittal of comments to these proposed changes.
- Comment forms can be obtained at www.nfpa.org

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Proposed Changes 2014 NEC®

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