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2005 NEC® Proposals Report of CMP-1

Report on Code-Making Panel 1

May 20 & 21, 2003

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Principal Members:

John Minick, Chairman - National Electrical Manufacturers Association

Michael Anthony – Association of Higher Education

Louis A. Barrios, Jr. – American Chemistry Council

David A. Dini – Underwriters Laboratories

William T. Fiske – Intertek Testing Services

H. Landis Floyd, II – Institute of Electrical & Electronic Engineers

Palmer L. Hickman – International Brotherhood of Electrical Workers

David Hittinger – Independent Electrical Contractors

Randall R. McCarver – Alliance for Telecommunications Industry Solutions

Lanny G. McMahill – International Association of Electrical Inspectors

H. Brooke Stauffer – National Electrical Contractors Association

John W. Troglia – Edison Electric Institute

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Alternate Members:

Gil Moniz - National Electrical Manufacturers Association

Ernest W. Buss – American Chemistry Council

Kenneth P. Boyce – Underwriters Laboratories

William T. Fiske – Intertek Testing Services

Donald H. McCullough, II – Institute of Electrical & Electronic Engineers

Rick Munch – International Brotherhood of Electrical Workers

Lawrence S. Ayer – Independent Electrical Contractors

Ernest J. Gallo – Alliance for Telecommunications Industry Solutions

Russell J. Helmick, Jr. – International Association of Electrical Inspectors

Neil F. Labrake, Jr. – Edison Electric Institute

Nonvoting Members:

Ark Tsisserev – Canadian Standards Association International

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NFPA Staff Liaison to CMP-1

Mr. Kenneth G. Mastrullo,

NFPA Senior Electrical Specialist

May 20 & 21, 2003

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Total Public Proposals – 242

Total Panel Proposals - 6

Proposals Accepted – 23

Proposals Accepted in Principal - 48

Proposals Accepted in Part – 1

Proposals Accepted in Principal and in Part – 4

Proposals Rejected - 166

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Proposal 1-2. Proposal will substitute the word "Bonding" for the word "Grounding"

- Part of a universal change proposed throughout the NEC
- Basic change will be how the NEC treats the existing basic term "equipment grounding conductor" throughout the NEC if concept of proposal is accepted
- Will then state – "equipment bonding conductor"
- Also see Proposals 1-59, 1-60, 1-63, 1-96, 1-99, and 1-237

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Proposal 1-25: Add Fine Print Note to 90.2(B)(4) and (5)

FPN: Utilities are organizations, typically designated or recognized by governmental law or regulation by public service/ utility commissions, that install, operate, and maintain electric supply (such as generation, transmission, or distribution systems) or communication systems (such as telephone, CATV, Internet, satellite, or data services). As such, the utility is subject to compliance with codes and standards covering these activities relevant to their industry as adopted under governmental law or regulation. Refer to the appropriate governmental bodies such as, state regulatory commissions, Federal Energy Regulatory Commission, and Federal Communication.

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Proposal 1-46: Add Definition of "Abandoned Cables"

Abandoned Cables. Cable that is neither terminated at both ends nor identified for future use with a tag.

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Proposal 1-54: Relocate Definition of "Arc-Fault Circuit Interrupter"

Arc-Fault Circuit Interrupter. A device intended to provide protection from the effects of arc faults by recognizing characteristics unique to arcing and by functioning to de-energize the circuit when an arc is detected.

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Proposal 1-84: Revise Definition of "Dwelling Unit"

Dwelling Unit. One or more rooms for the use of one or more persons as a housekeeping unit with space for eating, living, cooking, and sleeping, and permanent provisions for sanitation.

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Proposal 1-97: Add Definition of "Grounding Electrode"

Grounding Electrode. A device that establishes an electrical connection to the earth.

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Proposal 1-98: Revise Definition of "Grounding Electrode Conductor"

Grounding Electrode Conductor. The conductor used to connect the grounding electrode(s) to the equipment bonding conductor, to the grounded conductor, or to both, at the service, at each building or structure where supplied by a feeder(s) or branch circuit(s), or at the source of a separately derived system.

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Proposal 1-101: Add Definitions of "Guest Room" and "Guest Suite"

Guest Room. An accommodation combining living, sleeping, sanitary, and storage facilities within a compartment.

Guest Suite. An accommodation with two or more contiguous rooms comprising a compartment, with or without doors between such rooms, that provides living, sleeping, sanitary, and storage facilities.

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Proposal 1-114: Add Definition of "Kitchen"

Kitchen. An area used, or designated to be used, for the preparation of food.

Need given for definition was to identify areas of non-dwelling kitchens requiring GFCI protected 125-volt, single-phase, 15- and 20-ampere receptacles as per Section 210.8(B)(3).

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Proposal 1-122: Add Definition of "Neutral Conductor"

Neutral Conductor. A conductor, other than a grounding conductor, that is connected to the common point of a wye connection in a polyphase system or the point of a symmetrical system which is normally at zero voltage.

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Proposal 128: Add FPN to Definition of "Qualified Person"

FPN: Examples of this safety training include, but are not limited to, training in the use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools and test equipment when working on or near exposed conductors and or circuit parts that are or can become energized.

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Proposal 1-138: Add Definition of
"Supplementary Overcurrent Protective Device"

Supplementary Overcurrent Protective Device. A device intended to provide limited overcurrent protection for specific applications and utilization equipment such as luminaries (lighting fixtures) and appliances. This limited protection is in addition to the protection provided in the required branch circuit by the branch circuit overcurrent protective device.

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Proposal 1-157: Relocate Table 430.91 to new Section 110.20

- Table provides enclosure types for various environmental conditions such as dry, wet, rain, sleet, dust, and other environments
- Table is similar to NEMA 250, Standard on 1000 Volt and Less Enclosures but is not as complete as NEMA 250
- Table relocated to Article 110 would now apply generally to NEC and not just to motor controller enclosures as currently in Table 430.91

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Proposal 1-172a: Revise Section 110.16 "Flash Protection"

- Meter socket enclosures added to list of applicable equipment
- Revised marking to include incident energy available, or

  The rating of needed protective clothing and equipment

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Proposal 1-172a Continued -

- Marking based on calories per square centimeter (cal/cm2)
- Marking meant to warn "qualified people" of potential arc flash hazards, and
- To aid in the selection of flame resistant clothing and other personal protective equipment
- Such warning label shall be clearly visible before any procedure is undertaken where opening energized equipment is undertaken
- New FPN added referencing IEEE Std. 1584-2002, IEEE Guide for Performing Arc-Flash Hazard Calculations

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Proposal 1-208: Conditions Under Table 110.26(A)(1) Revised

- Condition 1 – Exposed live parts on one side of the working space and no live or grounded parts on the other side of the working space, or exposed live parts on both sides of the working space that are effectively guarded by insulating materials.

- Condition 2 – Exposed live parts on one side of the working space and grounded parts on the other side of the working space. Concrete, brick, or tile walls shall be considered as grounded.

- Condition 3 – Exposed live parts on both sides of the working space.

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- Proposal 1-231: Accepts premise for over 600-volt equipment that only energized equipment requires specific working space

- **110.31(A) Working Space.** Except as elsewhere required or permitted in this Code, equipment likely to require examination, adjustment, servicing, or maintenance while energized shall have clear working space in the direction of access to live parts ……

- This section now duplicates the language and conditions in existing Section 110.26(A) for equipment 600 volt and less.

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Proposal 1-240: Relocates existing Part IV of Article 314 to new Part V of Article 110.

Manholes and Other Electric Enclosures Intended for Personnel Entry, All Voltages

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Thank You for Your

Attention and Participation

May 20 & 21, 2003

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2005 NEC® Proposals Report of CMP-2

Report on Panel Actions CMP-2

Raymond W. Weber

Chair

May 20 & 21, 2003

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CMP-2 considered a total of 375 Proposals, Actions are as follows: Reject 279, Accept 31, Accept in Principal 53, Accept in Part 1, and Accept in Principal & Part 11.

Cmp-2 generated 5 Panel Proposals

CP-200 to CP-204

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- 2-5 – (210 & 220): Accept
- The panel agreed with the TCC recommendation that the term “ guest room” be replace with the phrase “ guest rooms or guest suites”. The term suites was added for clarity, the occupancies are identical whether the accommodation consists of one or more rooms.

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- 2-30 – (210.5 (C) (New); A/Principle
- Delete existing 210.4 (D) add new (C)
- For ungrounded conductors, in premises with more than one nominal voltage system, each ungrounded conductor of a branch circuit, where accessible, shall be identified by system. Means of ID shall be permitted to be by color coding, marking tape, tagging or other approved means and shall be permanently posted.

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- 2-32 – (210.6 (D) (2): A/Principle
- Revised, (2) Cord-and-plug connected or permanently connected utilization equipment other then luminaries (fixtures).
- The current text is interpreted to permit a 480-volt, delta-connected system to supply the ballasts of HID fixtures. This is in conflict with 210.6 (D) (1), requiring (22') on poles or (18') on other structures.

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- 2-47 – (210.8 (A)): Reject.
- The submitter's intentions was to expand the use of GFCI outlets for all those required by 210.52, with exceptions for receptacles in garages, unfinished basements for dedicated appliances, refrigeration equipment, security equipment and other life-safety equipment. Also require GFCI outlets for boat hoist motors and associated equipment.

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- 2-70 – (210.8 (B)): A/Principle in Part
- Panel has added additional GFCI requirements for other than dwelling units.
- Add (4) Outdoors in public spaces for the purposes of this section a public space is defined as any space that is for use by or is accessible to the public. Panel statement noted it does not apply where the public does not have access.

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- 2-134a - (210.12(B)): Accept
- (B) has been revised stating " a listed AFCI, combination type installed to provide protection of the branch circuit". With an Exception, for location being permitted at other than the origination of the branch circuit under (1) AFCI installed within 1.8 m (6 ft) of the BC overcurrent device and (2) circuit conductors between the overcurrent device and AFCI are in metal raceway or a cable with a metallic sheath.

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- 2-167 (210.12(B) Excpt. #2 (New) A/Principle, to read:
- " AFCI protection shall not be required for an individual branch circuit supplying a dedicated outlet for life support equipment in dwelling unit bedrooms. Such receptacles shall be marked " Life Support Equipment Only". To note the only intended use.

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- 2-190 – (210.23(A)(1): A/Principle
- Add, “ not fastened in place” to the title and text since some cord and plug connected equipment may be fastened in place: e.g. food waste disposers, dishwashers, trash compactors, etc. Where complying with other Code rules, a multioutlet circuit may supply more than one of these loads.

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- 2-211a – (210.52(C) (1) Excpt.): Accept
- Exception to (1): Receptacle outlets shall not be required on a wall directly behind a range top or sink. The area directly behind a range top or sink is determined as shown in Figure 210.52. Receptacle outlets in this location shall not be considered as the required countertop outlets.

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- 2-211a – (210.52 (C) (2): Accept
- Island Counter Spaces. New second sentence. Where a range top or sink is installed in an island counter and the width of the counter behind the R/S is less than 12 inches, the R/S is considered to divide the island into two separate countertop spaces as defined in 210.52 (C) (4). New Figure.

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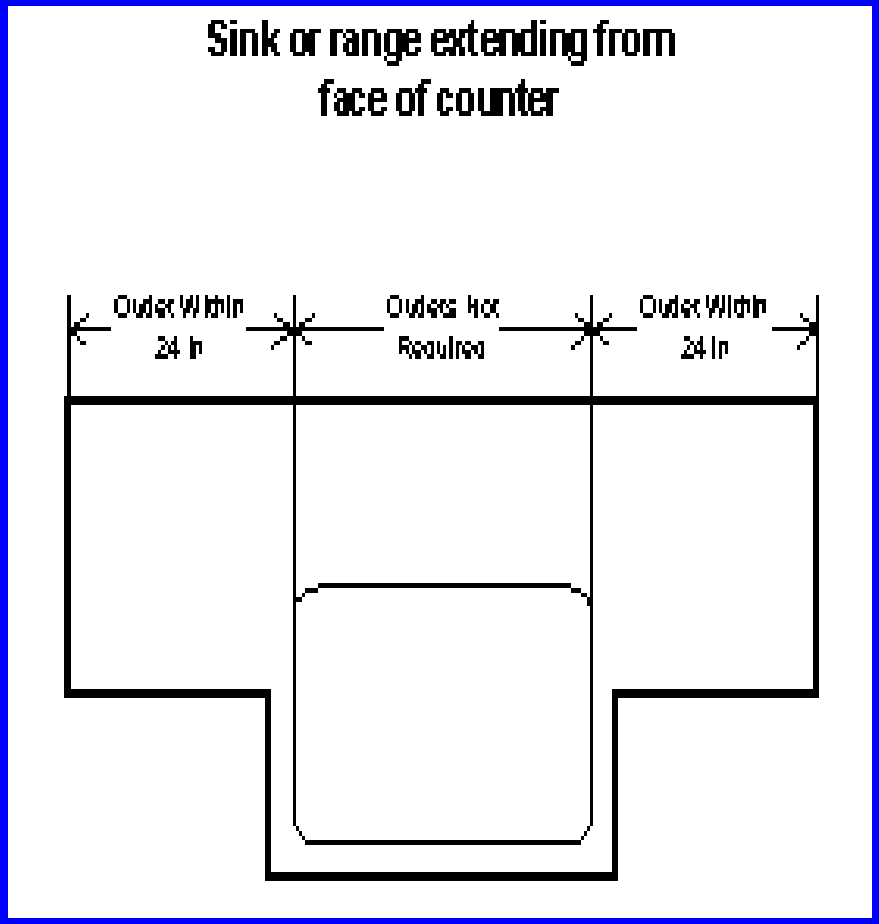

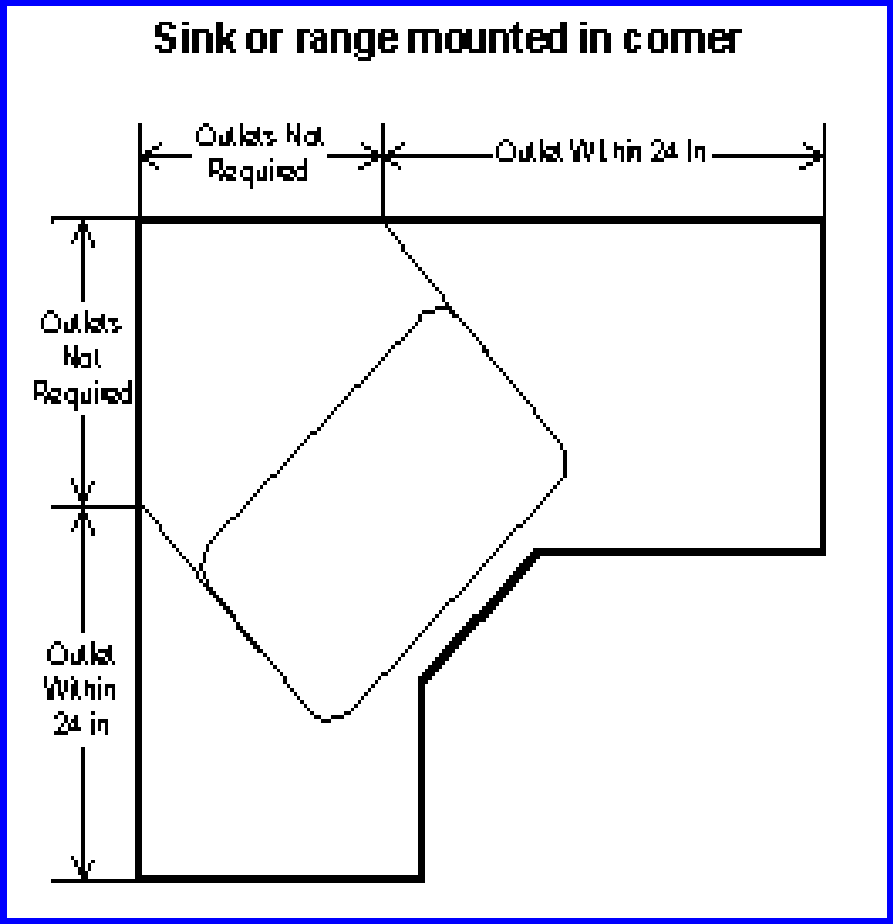

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- 2-229–(210.52(D) & Except.): A/Principle
- In dwelling units, at least one receptacle outlet shall be installed in bathrooms within 900 mm (3ft) of the outside edge of basin.
- Exception: The receptacle shall not be required to be mounted in the wall or partition where it is installed on the face of the basin cabinet not more than 300 mm (12in.) below the countertop.

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- 2-242–(210.60(A)): Accept, with comment.
- Guest rooms or guest suites provided with permanent provisions for cooking shall have receptacle outlets installed in accordance with all of the applicable rules in 210.52.
- Comment, Panel affirms its position that permanent provisions for cooking do not include equipment such as microwave oven.

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- 2-276 - (215.2(B)): A/Principle
- Feeders Over 600 Volts. Add new sentence
- Where installed, feeder circuit grounded conductors shall not be smaller than the required feeder equipment grounding conductor specified in 250.122.

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- 2-280 – (215.8): A/Principle
- Delete 2002 NEC 215.8, Means of Identifying Conductor with the Higher Voltage to Ground. Panel agrees since it is redundant and the requirement for high-leg marking is already covered in 110.15.

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- 2-289 – (215.12 (New)) A/Principle
- Similar to 2-30 – (210.5 (C) New). Feeders,
- Requiring identification of the grounded conductor in accordance with 200.6, equipment grounding conductor ID. Per 250.119 and ungrounded conductors for feeders where more than one nominal voltage system is present, where accessible shall be ID, and posted at panelboards.

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- 2-292 – (220): A/Principle
- Article Branch-Circuits, Feeders, and Service Calculations, was restructured by a Task Group of the TCC and submitted for consideration. The Panel accepted the proposal and has subsequently modified the proposals through the panel action on (220).

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- 2-298 – (220.3 (New)): Accept
- As noted in Proposal 2-292 previous change
- 220.3 Application of Other Articles. In other articles applying to calculation of loads in specialized applications, there are requirements provided in Table 220.3 that are in addition to, or modifications of, those within this article. Table provides a good cross reference to article and section number to enhance usability.

Report on Panel Actions
CMP-3

Richard Owen, Chair

May 20 & 21, 2003

Proposal 3-10, Section 300.3(B).

- The panel rejected this proposal which would require all conductors of a circuit, including the neutral, to be present in every outlet and switch box. This would require a 3-wire NMC cable for a switch loop, and four conductors in a cable for some applications.

Proposal 3-17, Section 300.4(2) (D).

- The Panel added a reference to furring strips to the section, clarifying that even though they may not be framing members, that the 1-1/4” clearance from any edge subject to nail or screw penetration must be maintained.

Proposal 3-24, Section 300.4(A) (1).

- The Panel accepted a new type of nail plate less than the standard 1/16 in. thick plate from previous codes. This plate must be listed as an equivalent to the 1/16in. plate plus be individually marked so the inspector can verify its listing even after installation.

Proposal 3-26, Section 300.4(A) (2).

- The panel accepted a proposal that clarifies that a nailer plate (or plates) must protect the wiring method for its entire length where subject to penetration. Otherwise, for example, where several cables are run together through a header, a single plate may not be big enough to protect all the cables. Also, it clarifies that you may need several plates end to end if a cable runs parallel to a framing member without the required 1-1/4 clearance.

Proposal 3-39a, Section 300.5(B)

- The Panel developed a proposal that would move the listing requirement for cables and conductors so that the requirement applies to all conductors and cables used underground, whether direct-buried or installed in a raceway. The requirement was formerly in a section addressing only direct-buried cables.

Proposal 3-44, Section 300.5(D) (3).

- The Panel rejected a proposal that would require all conductors and cables buried deeper than 18 inches to have a warning ribbon installed 12 inches above them. The panel did not agree that feeders and circuits with proper overcurrent protection posed the same hazard as service conductors, which have minimal, if any, overcurrent protection

Proposal 3-47, Section 300.5(G).

- The Panel rejected a proposal to insert a minimum voltage requirement for sealing raceways as provided in 300.5(G). The panel did not agree that even though the voltage may be lower than the proposed 50 volts minimum that this would mean that corrosion could not occur.

Proposal 3-51, Section 300.6.

- The panel accepted an addition to the title which would clarify that this section addresses corrosion and other deterioration of metallic raceways. The Section was also re-written to better cover all possible types of corrosion or deterioration to all metallic systems. The corrosion-resistant compound required now must be listed.

Proposal 3-63, Section 300.11

- Even though the panel rejected this proposal, it did clarify in its panel statement that independent support wires installed specifically for the support of wiring methods and not the ceiling can be attached to the non-fire rated ceiling grid to prevent “trapeezing”.

Proposal 3- 67, Section 300.11(A) (1)

- The panel accepted an added phrase which clarifies that additional wires installed for wiring method support in a fire-rated ceiling may be attached to the ceiling grid.

Proposal 3-69, Section 300.11(C) new exception

The panel accepted the addition of an exception to the basic rule that cables cannot support each other unless listed for the purpose. The exception will now allow Class 2 cables intended solely for the purpose of controlling a piece of equipment to be supported by an AC or MC cable that feeds that same piece of equipment.

Proposal 3-72, 300.13(B)

- The panel rejected a proposal that would have required “pigtailling” all grounded (neutral) conductors on all circuits, not just on multiwire circuits. This would not have allowed the practice of using the terminals on a receptacle to continue the grounded conductor path on single circuits.

Proposal 3-81, Section 300.18(A), New Exception

- This exception clarifies that a sleeve used for mechanical protection of wiring methods is exempt from the requirement that raceways must be installed complete before installation of conductors.

Proposal 3-93, Section 300.22(B)

- The panel accepted a deletion of liquidtight metal conduit in this Section. This wiring method will no longer be allowed in manufactured ducts. It was eliminated from use in other spaces used for environmental air in the 2002 NEC

Proposal 3-94, Section 300.22(B) (C) & (D)

The panel rejected a new concept that would divide air-handling spaces into:

- 1. Raised floor & ceiling cavity plenums
- 2. Ducts and plenums.
- "Plenum" cable would no longer be allowed inside ducts and plenums, and a new "duct" cable is introduced in Articles 725, 760 and other "low voltage" articles under the purview of Panel 16.

Proposal 3-101, Table 300.50

- The Panel accepted some language changes to clarify the uses of the table and accepted a new Note 5 which describes an alternative where solid rock is encountered.

Proposal 3-106, New Article 526

- The Panel rejected a proposal for a new Article (Tentatively 526) that would cover wiring in historic buildings. This article would have allowed new installation of old wiring methods that are consistent with the age of the building, but may no longer be allowed by Code.

Proposal 3-112, Section 527.4(B)

- The panel accepted the language from TIA 02-1 which clarifies that NMC Cable may be used for Temporary Installations in buildings of any height or construction type. The language of 334.10 in the 2002 NEC would have limited the use of NMC for temporary installations in some construction types unless the NMC was protected by a 15-minute fire-rated finish

Proposal 3-120, Section 527.5

- The panel accepted a proposal to require that all holiday lighting be listed by a recognized testing laboratory

Proposal 3- 126, Article 725

- The panel accepted a proposal developed by a task group of Panel 16, which had started this project prior to Articles 725, 727 and 760 being given to Panel 3. This proposal will set a uniform numbering system for all the “low voltage” articles so their format will be the same. These Articles are 725, 760, 770, 800, 820 & 830.

Proposal 3-127, Sections 725.2 & 760.2

- The panel rejected 7 new definitions for different types of air-handling spaces since it did not accept the change in uses as proposed in 300.22. These definitions are:
- air duct
- air-handling unit room plenum
- plenum, air-handling unit room
- plenum, apparatus casing
- plenum, ceiling cavity
- plenum, duct distribution
- plenum, raised floor.

Proposal 3-157, Section 725.42

- The panel accepted a clarification that the marking required for class 2 & 3 circuits should be on the equipment at the source of the circuit, not necessarily at all other points on the circuit.

Proposal 3-162a, new Section 725.56(F)

- The panel developed a proposal that addresses the separation of Class 2 & 3 circuits from audio circuits using class 2 or 3 wiring methods. The audio circuits may be of a high enough amperage or voltage that a fault could affect Class 2 or 3 circuits, some of which are used for control of life safety equipment.

Proposal 3-173, Sections 725.61(A), 725.61(B) (1), 760.61(A) & 760.61(B) (1)

- The panel accepted the removal of the sentence "abandoned cables shall not be permitted to remain" to eliminate redundancy. It was noted by the panel that Sections 725.3(B) and 760.3(A) remain and that their location in the two articles still require removal of abandoned cables throughout the two articles.

Proposal 3- 192, Section 725.71

- Since the panel did not accept the concept of revising the air-handling locations in 300.22, it did not accept the new hierarchy of the section and that plenum cable usage would be limited. The panel accepted the new “duct cable” as an equivalent to plenum cable rather than a level above it as proposed

Proposal 3-216, Section 725.71(F)

- The panel rejected new text that defined Circuit Integrity cable (CI) since there was no proposed usage in Article 725

Proposal 3- 223, Article 760

- The panel accepted a proposal to re-number Article 760 in the same format as 725, 770, 800, 820 & 830. See also Proposal 3-126.

Proposal 3-234, Section 760.6 new FPN

- A proposal was accepted to reference ANSI/NECA 305-2001, *Standard for Fire Alarm System Job Practices*. This non-mandatory FPN will give installers a reference for installation of fire alarm systems

Proposal 3- 256, Section 760.41

- A phrase was added to the sentence to require that the power supply for a fire alarm system not be connected to a circuit that is arc-fault protected

Proposal 3- 264a, Section 760.56(D)

- The panel added a paragraph that will prohibit PLFA circuits from being in the same cable or raceway as audio system circuits as described in Sect. 640.9(C). The possible higher voltage or amperage of the audio circuit could possibly damage the fire alarm circuit and affect its operation

Proposal 3- 270, Section 760.61(A)

- The panel rejected a concept to require the “duct” cables in inaccessible plenums where removal is considered impossible

Proposals 3-273, 3- 275 & 3-277

- The Panel Accepted Circuit Integrity cables to be used in the following Sections where 2-hour circuit integrity is needed:

➢ 760.61(A) FPLP-CI Cable

➢ 760.61(B) FPLR-CI Cable

➢ 760. 61(C) FPL-CI Cable

Proposal 3- 286, Section 760.71

- Since the panel did not accept the concept of the new definitions for air- handling spaces, it did not accept the proposal that would have limited the use of plenum cable and put the new “duct” cable in the hierarchy table above plenum cable. The panel accepted “duct” cable as an equivalent to plenum cable.

Proposal 3- 301, Chapter 9, Table 12(B)

- The column “Over 100 and Through 250” has been deleted since the system and equipment it refers to has not been manufactured in over 20 years. Existing systems of that type would still be legal since they were properly installed under a previous code.

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CODE MAKING PANEL 4

ARTICLES

225 Outside Branch Circuits and Feeders.

230 Services

May 20 & 21, 2003

CMP- 4 Panel Makeup

- CMP- 4 is made up of 21 members
- The Panel is well balanced with members representing enforcement, installers, labor, utilities, listing agencies and manufacturers.

CMP- 4 ROP Stage for 2005

- CMP- 4 handled one hundred twenty nine proposals. One hundred twenty one public proposals and eight proposals generated by the panel.
- The panel handled numerous proposals that were style manual issues

CMP- 4 Panel Actions for 2005 NEC

- Proposal 4-25a (225.30(A)(6)) Accepted to revise text
- Add (6) Redundant systems for the purpose of enhanced reliability of the supply
- This clarifies an on going issue that redundant systems are often necessary where supplying critical loads (Computer, Security) that are not covered under 517 (Health Care Facilities) and 702 (Optional Standby Systems)

CMP- 4 Panel Actions for 2005 NEC

- Proposal 4-26a , This proposal combines the requirements of 225.31 and 225.32 for clarity and usability.
- Panel 4 over several code cycles has had many proposals requesting clarification on the distance from a building that a service or feeder can be located .
- The proposal was accepted at the panel meeting but received a five to five vote at the ballot stage.

CMP- 4 Panel Actions for 2005 NEC

- The sticking point is 225.31(A)(1) The location where the Branch Circuit or Feeder disconnect is located when with-in sight from the building or structure supplied.

CMP- 4 Panel Actions for 2005 NEC

- Proposal 4-48 (230.5(new)). required Load Calculations
- If required by the AHJ. Shall be prior to the installation of the service
- Showing the individual loads, appropriate code references, demand factor calculations and the size and type of conductors used.
- The panel Rejected this stating it is covered by 80.13(12) if adopted or appropriate state or local law.

CMP- 4 Panel Actions for 2005 NEC

- Proposal 4-56 (230.11)(new)
- Replacement of service equipment at dwelling units.
- Install a listed AFCI, branch/feeder type or outlet branch circuit type on all existing 125 volt single phase, 15 and 20 ampere outlets for lighting and appliances.

CMP- 4 Panel Actions for 2005 NEC

- The AFCI, outlet branch circuit type, shall be installed at the outlet closest to, and within 3.0 m (10) of the overcurrent device as measured along the B.C. conductors.
- The panel action was Reject

CMP- 4 Panel Actions for 2005 NEC

- Proposal 4-84a (230.70) rewrite, Under Service Equipment- Disconnecting Means.
- Over several Code Cycles Panel 4 has had many different proposals requesting clarification on the distance from a building that a service can be located.

CMP- 4 Panel Actions for 2005 NEC

- The proposal was accepted at the panel meeting but received a five to five vote at the ballot stage.
- The sticking point is 230.70(A)(2)(1) The location where the Service disconnecting means is located where within sight from the building or structure served

CMP- 4 Panel Actions for 2005 NEC

- Proposals 4-89, 4-90 and 4-91 relating to “Transient voltage surge suppressors”where installed as part of listed equipment.
- Proposal 4-89 (230.71(a)). Was held for further study from the previous cycle.
- The Panel AIP and AIPt .
- Adding TVSS after “monitoring equipment”.

CMP- 4 Panel Actions for 2005 NEC

- "…….six sets of disconnects per service grouped in any one location. For the purpose of this section, disconnecting means used solely for power monitoring equipment, transient voltage surge suppressors, or the control circuit of the ground-fault protection system or power-operable service disconnecting means, installed as part of the listed equipment, shall not be considered a service disconnecting means.

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Paul Dobrowsky
Eastman Kodak Co.
Member of NEC CMP 5

May 20 & 21, 2003

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274 Public proposals

5 Panel Proposals

Thanks to:

Ron Toomer Chair CMP5

Joe Sheehan NFPA Staff

Jeff Sargent NFPA Staff

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ROP 5-1, 5-41, 5-45

Proposed Change:

Equipment Grounding Conductor (EGC)

to

Equipment Bonding Conductor (EBC)

Did **Not** receive the necessary 2/3 to be accepted.

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ROP 5-6

A proposal to renumber and relocate Article 200 to Article 248 was rejected.

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ROP 5-16 200.6(B) Means of ID Grounded Conductors Larger than 6 AWG

Accepted proposal to allow gray markings at terminations.

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ROP 5-37 Title & Scope of Article 250

Accepted a change to:

Article 250. Grounding and Bonding

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ROP 5-42 All of Article 250

A proposal to change the terms "ground" and "grounded", to "earth" and "earthed" was rejected.

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5-44 Proposal to reorganize Article 250 into 3 parts.

I General

II Grounding Contains 1 table (250.66)

III Bonding Contains 2 tables

- Supply Side Bonding (duplicate of 250.66 + 12.5 % rule)
- Load Side Bonding (250.122)

Was rejected

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ROP 5-74 , 5-80, 5-84 250.28 Main Bonding Jumper and System Bonding Jumper

A proposal to add the concept of a system bonding jumper was accepted in principle. A proposal submitted to CMP 1 to add a definition of System Bonding Jumper was also accepted.

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ROP 5-78, 5-93, 5-94 250.30 Separately Derived Systems

A proposal to revise 250.30 was accepted in principle.

Common Grounding Electrode Conductor

Proposal 5-93 added the minimum common GEC size to be 3/0

Connection means is ~ *similar* to 250.64 for services

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ROP 5-109 250.32 Two or More Buildings or Structures Supplied from a Common Service

A proposal to change the title to:

Buildings or Structures Supplied by Feeder(s) or Branch Circuit(s) was accepted in principle

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ROP 5-115, 5-118 250.50 Grounding Electrode System

A proposal to remove the words “If available on” related to electrodes at a building or structure was rejected.

Is a concrete-encased electrode available?

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ROP 5-124, 5-126 250.52(A)(2) Metal Frame of Building or Structure

Proposals to clarify what constitutes a connection to earth were not accepted.

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ROP 5-128 250.52(A)(5) Rod and Pipe Electrodes

ROP 5-133 250.(A)(6) Plate Electrodes

ROP 5-144 250.56 Resistance of …

Proposals to require an minimum of two electrodes and remove the 25 ohm resistance requirement were rejected.

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ROP 5-141 250.54 Supplementary Grounding Electrodes

A proposal to change the term “ supplementary” to “additional” was rejected.

250.53(D)(2) use the term “supplemental” referring to what must be used in addition to a metal underground water pipe.

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ROP 5-154 250.64(B) Securing and Protection from Physical Damage (GEC)

A proposal to require the minimum burial depth for grounding electrode conductors to be 12 inches was accepted. A reduction in “cover” depth to 6 inches is permitted if beneath 2 inches of concrete or similar material.

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ROP 5-160, 5-161 250.64(D) Grounding Electrode Conductor Taps

Proposals to add the term “common” and a clarification of how to size the common GEC were accepted in principle. This would make this section consistent with the use in 250.30 for separately derived systems.

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ROP 5-162, 5-163, 5-165, 5-165, 5-184, 5-190 250.64(E) Enclosures for Grounding Electrode Conductors

Proposals to revise this section were accepted in principle to clarify where bonding was required for grounding electrode conductors installed in “ferrous” metal enclosures.

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5-166 250.64(G) (New) Run in a Straight Line

A proposal to require grounding electrode conductors to be installed in a “straight line” was rejected.

What about the burial depth requirement accepted in 5-154 250.64(B)

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ROP 5- 176 250.68(A) Exception [Accessibility of GEC connections]

A proposal to permit exothermic or irreversible connections to “fire-proofed structural metal” (removing the accessibility requirement) was accepted.

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ROP 5-183 250.86 Ex. 2 "Short Sections of Raceways"

A proposal to add a "descriptor" of 10 feet to what constitutes a "short section" that is not required to be grounded was rejected.

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ROP 5-188 250.96(B) Isolated Grounding Circuits

ROP 5-243, 5-244, 5-249 250.146(D) Isolated Receptacles

Proposals to change isolated equipment grounding conductor to dedicated or insulated equipment grounding conductor were rejected.

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ROP 5- 202 250.112 [Grounding Electrical Equipment-Specific -fixed]

A proposal to clarify where (point of grounding) the equipment is to be grounded (bonded) was accepted in principle.

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ROP 5-206, 5-218 250.118 (6)(d) &(7)(e) EGC [Flexibility]

A proposal related to prohibiting using FMC and LFMC as a permitted equipment grounding conductor where the wiring method was flexed “in use” was rejected.

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ROP 5-211 250.118 Ex. New

A proposal to require a “wire type” equipment grounding conductor” in metal conduit located on rooftops was accepted in principle.

This proposal was suggested to be referred to CMP 8 for action.

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ROP 5-213, 5-214, 5-215, 5-216 250.118(5) &(6) Types of Equipment Grounding Conductors

Proposals to delete the use (beyond 6 feet) of non-listed (for grounding) FMC as an EGC were accepted and accepted in principle.

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ROP 5- 220 250.119 Identification of EGC's

A proposal to limited the use of green and green with yellow striped insulation for use only as EGC's was accepted.

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ROP 5-229 250.122(D) Size of EGC's

A proposal to remove the provisions for basing the EGC on the motor overload device for motor circuits protected by instantaneous trip circuit breakers or motor short circuit protectors was accepted. The remaining text would require the EGC to be based on 125% of the motor full load current.

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ROP 5-232 250.122(G) (New) Feeder Taps

A proposal to specify that the size of the EGC for feeder taps must not be smaller than that provided in Table 250.122 based on the OCD of the feeder was accepted in principle.

The “tap EGC” is not required to be larger than the tap supply conductors.

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ROP 5-233 Figure 250.126 ID of wiring Device Terminal

A proposal to permit the grounding symbol to be used without the circle was rejected.

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ROP 5-353 250.184

A proposal to add provisions for single point grounded systems 1KV and over was accepted.

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ROP 5-267 285.3 TVSS Uses Not Permitted

A proposal to permit TVSS's on ungrounded systems where specifically listed for the use was accepted.

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Thanks for Playing

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NEC CMP 6 – ROP Summary

- **CMP 6 acted on 120 Proposals that were submitted, and also generated 3 Panel Proposals. The recorded actions on these proposals were as follows:**
- **Accept – 27**
- **Accept in Part – 3**
- **Accept in Principle – 8**
- **Accept in Principle in Part – 3**
- **Reject – 82**

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Submitters

The following submitters forwarded proposals to CMP 6 for the ROP process:

John E. Conley – 26

Ted L. Smith, Jr. – 7

James Daly – 6

Donald A. Ganiere – 6

Austin D. Wetherell – 5

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Articles – Tables – Chapters

3 = Entire Code / 1 = Article 100

34 = Article 310 / 24 = Article 400

35 = Table 310 / 5 = Table 400

1 = Table 402 / 8 = Table B-310

6 = Chapter 9, Table 5 / 2 = Article 402

1 = Annex G, Table G-1

ROP 2002 = 239 Proposals

ROP 2005 = 120 Proposals

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Proposal #6-1 / (Entire Document) / Reject

- CMP 6 considered a number of proposals concerning the terms grounding and bonding. The panel agreed that there was confusion in the field surrounding these 2 terms and supports the concept of change; however, the decision to uses these terms is the responsibility of CMP 5.

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Proposal #6-5 / (310.2) / Reject

•CMP 6 considered a number of proposals relating to the term “Earthed”, in lieu of grounding. All proposals were rejected and it was noted that “Grounded” has been universally accepted for years within the NEC. Therefore, “Earthed” would not add clarity to the Code.

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Proposal #6-6a (310.4) / Accept

- **Initially labeled as CP 600, this proposal was generated by CMP 6 to avoid the use of additional wordage that did not add clarity to the Code.**

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Proposal #6-10a / (310.5 Exc.) / Accept

- Initially labeled as CP 601, this proposal was generated by CMP 6 to achieve a uniform presentation of the Code. All 10 exceptions were deleted.

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Proposals #6-31 / (310.15(B)(2)(a) / Reject

- **The submitter made a presentation to CMP 6 concerning the above article. While CMP 6 agreed with the intent, the material was more appropriately addressed in 334.80; therefore CMP 6 forwarded the proposal to CMP 7 for action.**

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Proposal #6-45 / (Tables 310.16, 310.17, 310.18, 310.19)

Accept in Principle in Part

- **The submitter made a presentation to CMP 6 concerning the above article. The panel noted that this information did not apply to Tables 310.17 or 310.19. The revised wording of CMP 6 was inserted in 310.15(B)(2)(c), rather than as a footnote.**

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Proposal 6-88a / (400.7c) / Accept

- **Initially labeled as CP 602, this proposal was generated by CMP 6 to reduce the confusion regarding the application and use of "power strips". The 3 items address the confusion that existed.**

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Proposal #6-97 / (400-15) / Reject

- **The submitter made a presentation to CMP 6 concerning the above article. The device, (LCDI), is not prohibited in the Code; however, the submitters concerns should be addressed in Article 240, CMP 10 and in Article 210, CMP 2.**

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Panel 7 Proposals For 2005 NEC

Articles 320, 322, 324, 326, 328, 330, 332, 334, 336, 338, 340, 382, 394, 396 and 398

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The National Electrical Code Technical Correlating Committee Identified concerns with using the terms

- "Uses Permitted" and
- "Uses not permitted"

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Panel 7 agreed with the concept of deleting the article of "Uses Permitted" and expanding the article for "Uses Not Permitted" in all sections that are panel 7's responsibility.

The articles with XXX.10 were thus deleted and the scope of articles with XXX.12 were expanded.

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For Article 398.10 there was no proposal for deletion and panel 7 assumes this will be accomplished by the Technical Correlating Committee.

Acceptance of Proposal 7-209 (398.12) will require deletion of 398.10.

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A summary of the main action by Panel 7

Proposal 7-8-(320.10) Accept

- Delete 320.10

Proposal 7-12-(320.12) Accept

Accept with scope revision

- (8) Where subject to physical damage.
- (9) In damp or wet locations
- (10) In air voids of masonry block or tile walls where such walls are exposed or subject to excessive moisture or dampness
- (11) Imbedded in plaster finish on brick or other masonry in damp or wet locations.

Proposal 7-15-(320.17) Accept

- Type AC cable shall be protected in accordance with 300.4(A), (C), and (D). Bushings not required for Type AC cable passing through holes in metal studs.

Proposal 7-25-(322.10) Accept

- Delete 322.10

Proposal 7-27-(322.12) Accept

Accept with scope revision

- (5) Where subject to physical damage.
- (6) Where installed less than 8’ above the floor.
- (7) Where installed in concealed locations
- (8) Where the rating of the branch circuit exceeds 30 Amperes
- (9) As a branch circuit other than to supply tap devices for lighting, small appliances or small power loads.
- (10) In surface metal raceways……..

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Proposal 7-34-(324.12) Accept

Accept with scope revision

•(5) Where voltage between ungrounded conductors exceeds 300 volts or exceeds 150 volts to ground.

•(6) Where general purpose branch circuits exceed 20 amperes or 30 amperes for individual circuits.

•(7) On floors unless……

•(8) On wall surfaces unless……

•(9) On heated floors in excess of 30 degrees C unless……

•(10) Where any portion of FCC system exceeds .090 inches in height unless……..

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Proposal 7-44-(326.10) Accept

- Delete 326.10

Proposal 7-45-(326.12) Accept

Accept with scope revision

- (1) Used as interior wiring
- (2) Exposed in contact with buildings
- (3) Used above ground

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Proposal 7-49-(328.10) Accept

- Uses permitted deleted

7-52-(328.12) Accept

Accept with scope revision

- (2) In cable trays, unless specified in 392.3(B)(1).
- (3) Direct buried, unless in accordance with 300.5.

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Proposal 7-55-(330.10) Accept

- Delete Uses Permitted

•Proposal 7-64-(330.12) Accept

Accept with scope revision

- (1) In damp or wet locations…….
- (3) In wet locations where none of the following conditions are met:

A. The metallic covering is not impervious to moisture

B. A lead sheath or moisture impervious jacket is not provided under the metal covering.

~~C. The insulated conductors are not listed for a wet location.~~

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Proposal 7-72-(330.30)

Proposal 7-75-(330.30) AIP

Accept with scope revision

- Revise text to allow supporting and securing using staples, cable ties, straps, hangers, or similar fittings.

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Proposal 7-86-(332.10) Accept

- Delete Uses Permitted

Proposal 7-88-(332.12)

Accept with scope revision

- (1) In underground runs unless
- A. Suitably protected from physical damage
- B. Suitably protected from corrosion

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Proposal 7-99-(334.10) Accept

- Delete Uses Permitted

Proposal 7-115-(334.12)

Accept with scope revision

- (1) For multifamily dwellings of other than types III, IV, and V construction
- (2) For non dwelling structures of other than types III, IV, and V construction and where the cables are not concealed within walls, floors, and ceilings that provide a thermal barrier of material that has at least a 15 minute finish rating as identified in listings of fire rated assemblies.

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Cont'd

- (3) For cable tray installations unless identified for the use.
- (5) For installations as service entrance cable.
- (6) For use in commercial garages having hazardous locations except in accordance with 511.3(B)

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Proposal 7-150(A)-(334.80) Accept

- Add a new paragraph to 334.80 to read:

Where more than two NM cables containing two or more current carrying conductors are bundled together and pass through wood framing, which is to

be fire or draft-stopped using thermal insulation or sealing foam, the allowable ampacity of each conductor shall be adjusted in accordance with Table 310.15(B)(2)(a).

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Proposal 7-160-(336.10) Accept

- Delete uses permitted

Proposal 7-172-(336.12)

Accept with scope revision

- (1) As an aerial cable unless supported by a messenger in outdoor locations.
- (2) For non-power limited fire alarm circuits unless the conductors comply with 760.27.

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Cont'd

•(3) For exposed runs unless all of the following conditions are met:

(a) The installation is in an industrial establishment……

(b) thru (f) remain unchanged.

•(4) For installations in wet locations unless resistant to moisture and corrosion.

•(5) thru (7) remain unchanged.

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Proposal 7-180-(338.10) Accept

- Delete Uses Permitted

Proposal 7-194-(338.12)

Accept with scope revision

•Type SE & USE cable shall not be used under the following conditions or in the following locations:

•**(A) SE Cable**

•(1)For Branch circuits and feeder wiring unless……..

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Cont'd

• (2) For interior branch circuit and feeder wiring unless…….

FPN: See 310.10 for temperature limitation of conductors.

•(3) For exterior branch circuits and feeder wiring unless in compliance with Article 225 and supported according to 334.30 and used as messenger supported wiring allowed by Article 396.

•(4) Where un-insulated conductor is used as a grounded except when meeting the requirements of 250.140.

•(5) Where subject to physical damage except when meeting the requirements of 230.50(A).

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Cont'd

•**For** (6) For supply to appliances where SE cable is subject to temperatures in excess of the type of insulation used.

(B) USE Cable

• (1) For interior wiring including service, feeder, and branch circuit wiring

•(2) For exterior feeders and branch circuits unless……..Article 340.

•(3) For above ground installations except where USE cable terminates in an enclosure at an outdoor location where the cable emerges from the ground.

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Cont'd

- (4) Above ground unless protected per 300.5(D)

- (5) As a multi-conductor aerial cable unless supported by a messenger per Article 225 and Article 396.

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Proposal 7-197-(340.10) Accept

- Delete Uses Permitted

Proposal 7-203-(340.12) Accept

- Accept with scope revision

(1) As a substitute form wiring method for NM cable unless the cable is of the multi-conductor type and the installation and conductor requirements comply with Parts II and III of Article 334.

(2) For cable tray installations unless the cable is of the multi-conductor type identified for the use.
(3) ……(13)…..in accordance with Part III of Article 396.

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Proposal 7-208-(396.12(B)) Accept

- Uses not permitted

Messenger supported wiring shall not be used in hoistways or where subject to physical damage. The messenger shall not be used as a current carrying conductor.

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7-209-(398.12) Accept

- Accept with scope revision

Open wiring on insulators shall not be permitted in other than industrial or agricultural installations and:

(1) Where concealed by the building structure.

(2) Where the voltage exceeds 600 volts.

Panel 7 assumes that this proposal requires the deletion of 398.10

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Proposal 7-212a-(Annex E) Accept

- Add the five different types of construction in a table showing the construction type and the maximum number of stories permitted.
  - Type I
  - Type II
  - Type III
  - Type IV
  - Type V

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This concludes the report of Panel 7

May 20 & 21, 2003

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Code Making Panel 9
Dallas, TX

Timothy M. Croushore, P.E.

May 20 & 21, 2003

CMP 9 Members

- Ralph Young
- Hecter DeVega
- Fred Hartwell
- Jake Killinger
- Bob Kaemmerlen
- Tom LeMay
- Don Offerdahl
- Sukanta Sengupta
- Brad Rupp
- Jeff Bernson

CMP 9 Alternates

- Rod Belisle
- Robert Osborne
- Joe Bolesina
- Jim Carrol
- Jerome Seigel
- Julian Burns
- Dick Fogarty
- Monte Szendre

NFPA Staff Liaison

- **Don Shields**

CMP 9 Articles

1999 NEC	2002 NEC
• Article 370	• Article 314
• Article 373	• Article 312
• Article 380	• Article 404
• Article 384	• Article 408

Old CMP-13 Articles

- **Article 450 – Transformers and Transformer Vaults (Including Secondary Ties)**
- **Article 490 – Equipment, Over 600 Volts, Nominal**

CMP-9 Articles - 2005

- Article 312 – Cabinets…
- Article 314 – Boxes…
- Article 404 – Switches
- Article 408 – Panelboards…
- Article 450 – Transformers…
- Article 490 – High Voltage Equip…

CMP 9 Subjects

- Boxes - Outlet, Device, Pull and Junction
- Manholes to CMP-1
- Conduit Bodies
- Fittings
- Handhole Enclosures – New
- Transformers
- Transformer Vaults
- Cabinets
- Cutout Boxes
- Meter Socket Enclosures
- Switches
- Switchboards
- Panelboards
- Equipment over 600 Volts Nominal

2005 NEC Proposal Action

- 144 - Submitted Proposals
- 2 - Panel Proposals
- 146 Total Proposals

- 20 - Accept
- 106 - Reject
- 01 - Accept in Part
- 16 - Acc. in Principal
- 03 - Acc in Princ & Part

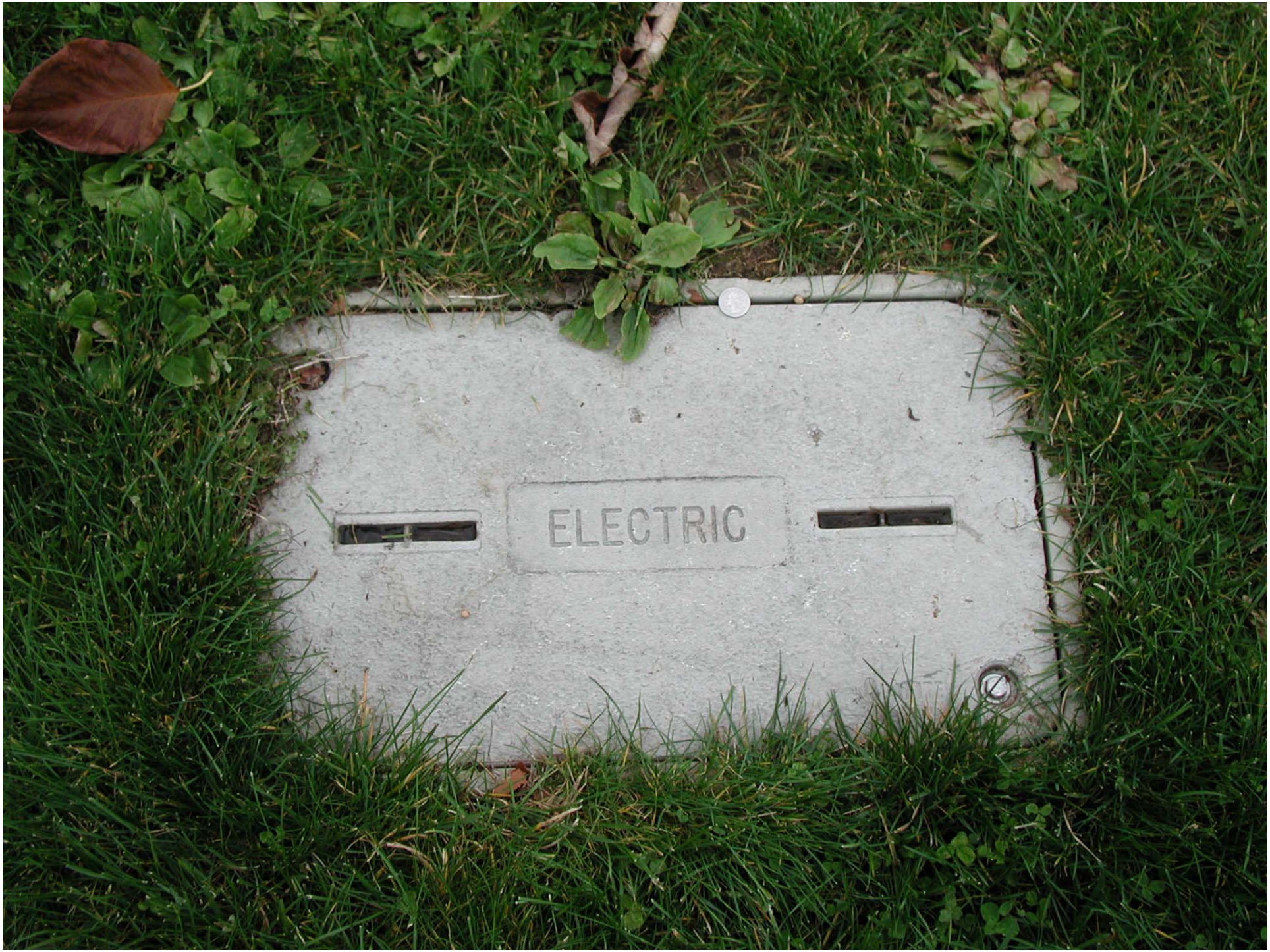
Prop 9-14, 15, 16, 17, 18, Article 314 Title and Scope Manholes to CMP-1 and Addition of Handhole Enclosures

- Article 314 Title – Outlet, Device, Pull and Junction Boxes; Conduit Bodies; Fittings; and Handhole Enclosures
- Section 314.1 – Scope – First Sentence – This article covers the installation and use of all boxes and conduit bodies used as outlet , device, junction, or pull boxes, depending on their use, and handhole enclosures

Proposal 9-14 through 18 Analysis

- This change removes the requirements from Article 314 and places them in Article 110. This change also included handhole enclosures within Article 314.

- Related Proposals are 9-23 and 9-68a


ELECTRIC

Section 314.27(D), Prop 9-57

Boxes at Ceiling-Suspended (Paddle) Fan Outlets.

- This proposal moves the requirements for outlet boxes and box systems used to support paddle fans from Article 422 to Article 314. This was a request of NEMA.

Section 404.9(B)(1), Prop 9-94

- Text to read as follows:
- The switch is installed with a metal yoke in direct contact with a metal box, unless the switch is of the self-grounding type, or the switch is installed on a nonmetallic box with integral means for grounding devices.
- Same requirement as Receptacles
- Might see some comments on this subject

Section 450.6, Prop 9-133

- This proposal revises the requirements for Secondary Ties. This proposal was mainly meant as an editorial revision. However, this proposal should be reviewed for any possible technical changes.

Section 490.46 Proposal 9-141

- This proposal deals with metal-clad and metal enclosed switchgear. The panel requested a task group be formed to deal with the technical subjects raised in Proposal 9-141. See the Panel Statement in proposal 9-141. The task group would address the technical aspects with regard to Metal Clad and Metal Enclosed Switchgear. Mr. Young and Mr. Carrol and Mr. Fogarty from CMP-9 agreed to serve on the committee. Additional representation from equipment manufacturers and electric utilities was requested.

Proposals with Minor Changes

- 9-5 – Connectors for wet locations
- 9-9, 10, 38, 39, 40, 42 – Messenger Supported wire and Open wire on Insulators
- 9-14 – New Section 312.4 identical with 314.21
- 9-43 – Adds plaster rings, domed covers, … to list
- 9-50 – Unprotected screw threads
- 9-52 – Splicing devices
- 9-80 – Holding means for knife switches

Proposals with Minor Changes

- 9-80a – Handle position on bus plugs
- 9-85 – Voltage limitation between snap switches
- 9-97 – Wall was changed to finished surface
- 9-101 – Renumbering of Art 408
- 9-133 – Secondary Ties

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Thank You!

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CODE MAKING PANEL-10

ARTICLE 240 Overcurrent Protection

ARTICLE 780 Closed-Loop and Programmed Power Distribution

May 20 & 21, 2003

CMP-10 Panel Makeup

- CMP-10 is made up of 24 members
- The Panel is well balanced with members representing enforcement, installers, labor, utilities, listing agencies, manufacturers, users and the fuse and circuit breaker industries.

CMP-10, ROP Stage for 2005

- CMP-10 handled eighty nine public proposals as well as five proposals generated by the panel
- The proposals generated by the panel addressed editorial and style manual issues

CMP-10 Panel Actions for 2005 NEC

- Proposal 10-8, Suggested a new definition to 240.2 for the term “Industrial Installation”
- Proposal was Rejected, the panel statement explains that the proposed definition “..is too restrictive”
- Three panel members commented in the Affirmative with possible language for the comment stage.

CMP-10 Panel Actions for 2005 NEC

- Proposal 10-49, Suggested the deletion of 240.21(B)(4)
- The submitter pointed out that list item #1 of 240.21(B)(4) requires that "Conditions of maintenance and supervision ensure that only qualified persons service the systems"
- This type of performance requirement exists forty nine times in the NEC

CMP-10 Panel Actions for 2005 NEC

- Proposal was Rejected, the panel however requested that the TCC review and/or appoint a task group to address this issue
- This performance language issue may be resolved with editorial changes and/or a definition of “Industrial Installation”

CMP-10 Panel Actions for 2005 NEC

- Proposals 10-27 & 29 along with Proposals 17, 18 & 19 which are comments from last cycle on which the action reported was to "Hold" and return as proposals
- The issue addressed by these proposals is the overcurrent protection provisions for supply cords of appliances, portable lamps and extension cords

CMP-10 Panel Actions for 2005 NEC

- 240.5(B)(1) Supply Cord of Listed Appliance or Portable Lamps. Where flexible cord or tinsel cord is approved for and used with a specific listed appliance or portable lamp, it shall be permitted to be supplied by a branch circuit of Article 210 in accordance with the following:

CMP-10 Panel Actions for 2005 NEC

- (1) 20-ampere circuits — tinsel cord or 18 AWG cord and larger
- (2) 30-ampere circuits — 16 AWG cord and larger
- (3) 40-ampere circuits — cord of 20-ampere capacity and over
- (4) 50-ampere circuits — cord of 20-ampere capacity and over

CMP-10 Panel Actions for 2005 NEC

- The panel Accepted in Principle proposal 10-27
- The panel action deleted specific permission for appliance and portable lamp supply cords

CMP-10 Panel Actions for 2005 NEC

- The panel added new text as follows:
- “.. shall be considered to be protected when applied within the appliance or portable lamp listing requirements, ..”

CMP-10 Panel Actions for 2005 NEC

- Extension cords revised as follows:
- Specific permission removed
- New text "..shall be considered to be protected when applied within the extension cord listing requirements"

CMP-10 Panel Actions for 2005 NEC

- An additional list item was added to address "Field assembled extension cord sets" allowing 16 AWG or larger on 20-amp branch circuits

CMP-10 Panel Actions for 2005 NEC

- Proposal 10-22, suggested a new exception to 240.4(C)
- Accepted in Principle
- The proposed text will permit devices rated at not more than 1600-amps to protect lower rated conductors provided:

CMP-10 Panel Actions for 2005 NEC

- Next higher device is not more than 106% of the ampacity of the conductors applied
- Conductor ampacity does not correspond with a standard OCPD ampere rating
- The next higher rating does not exceed 1600-amps
- The overcurrent device has been listed for use with the smaller conductors

CMP-10 Panel Actions for 2005 NEC

- CMP-10 Accepted Proposal 10-39, replacing the term “approved” with the term “identified” in 240.20(B)(1), (2) & (3)
- “Approved” circuit breaker handle ties could include nails, screws etc.
- “Identified” circuit breaker handle ties are readily available from circuit breaker manufacturers and are designed for the purpose

CMP-10 Panel Actions for 2005 NEC

- Proposal 10-35, suggested a relocation of 240.20(B) from “Part II Location” to “Part I General”
- Accepted in Principle
- The Panel action separates the existing requirement into two separate sections as follows:

CMP-10 Panel Actions for 2005 NEC

- NEW SECTION
- 240.15(B) Circuit Breaker as Overcurrent Device.
- NEW SECTION
- 240.16 Circuit Breaker as a Disconnecting Means (1) Multiwire Branch Circuit. (2) Grounded Single-Phase and 3-wire dc Circuits. (3) 3-Phase and 2-Phase Systems.

CMP-10 Panel Actions for 2005 NEC

- Proposal 10-57, suggested text to improve the clarity of 240.21(C)(3)(1)
- Accepted in Principle
- The present text is unclear in application to a single or multiple sets of secondary conductors
- The panel action is intended to improve the clarity of all list items in 240.21(C)

CMP-10 Panel Actions for 2005 NEC

- To improve clarity 240.21(C) is revised as follows:
- "(C) Transformer Secondary Conductors. Each set of conductors feeding separate loads shall be permitted to be connected …"

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•CMP 11 acted on 115 Proposals that were submitted, and also generated 5 Panel Proposals. The recorded actions on these proposals were as follows:

Accept – 40

Accept in Part – 5

Accept in Principle – 17

Accept in Principle in Part – 5

Reject – 53

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Proposal # 11-1 **Code Sections: Various**

•CMP-11 considered a number of proposals concerning the "equipment grounding conductor" vs. "equipment bonding conductor" issue.

•Based primarily on the actions of CMP 5, CMP 11 accepted proposal 11-1 in principle indicating that this proposed change could not be made across the board for all CMP 11 Articles, rather, each reference would have to be examined individually to determine if this change would be appropriate.

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Proposal # 11-5 **Code Section: New Article 409**

•Proposal 11-5 recommending a new Article 409 "Industrial Control Panels" was accepted at the ROP meeting. This proposal is intended to provide guidelines for manufacturers, installers, and inspectors of specialty control panels. Subsequent to the ROP meeting the ballot vote was 9 Affirmative and 5 Negative.

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Proposal # 11-6 **Code Section: Art 430 New Part X**

•Proposal 11-6, recommending creation of a new Part X in Article 430 to address the issues of "Adjustable Speed Drive Systems" was accepted. This recommended change places requirements for these drive systems in a central location in Article 430.

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Proposals # 11-8 and and numerous others

Code Sections: Art 430.81(A) various others

- Several proposals were accepted that recommended relocation of definitions from various sections throughout Articles 430 and 440 to 430.2 and 440.2 which is intended to make the code more user friendly.

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Proposals # 11-16 and numerous others **Code Sections: Art 430.7(A)(9) and various others**

- Proposal 11-16 and a number of other proposals recommending all references to "E series" motors in Article 430 be deleted were accepted since this type motor is no longer available.

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Proposal # 11-19 **Code Section: Art 430.8**

•Proposal 11-19 recommending that motor controllers be marked with the "short circuit current rating" was accepted in principal. While there was general agreement with this concept, the panel determined that there should be exceptions for certain motor controller applications.

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Proposals # 11-33 and Numerous Others

Code Sections: 430.36 and Various Others

- CMP 11 considered a number of proposals recommending that the term "grounded" be replaced with "earthed". All of these proposals were rejected because there was no technical basis to make such a drastic change.

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Proposals # 11-88a (11-15) **Code Sections:Tables 430.148, 430.149, 430.150 & 430.6(A)(1)**

•Panel Proposal 11-88a was written by CMP-11 in response to Proposal 11-15 submitted by the TCC relative to Comment 11-6 held over from the 2002 cycle. Proposal 11-88a affecting Tables 430.148, 430.149, 430.150 and Section 430.6 (A) (1) was developed to require the use of the nameplate current rating for low speed, high torque motors instead of the table values. This requirement was relocated from the Table headers and placed in Section 430.6 (A) (1).

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Proposal # 11-93 **Code Sections: 440.2 & 440.60**

•Proposal 11-93 which was submitted to add definitions for "room air conditioners", "packaged terminal air conditioners", and "packaged terminal heat pumps" in Article 440 was rejected because these terms are not used in the Code. This same proposal also recommend that PTAC and PTHP units not be required to have LCDI or AFCI protection for power cords. Requirements for use of these devices in the power cords were introduced into the NEC in the 2002 cycle.

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Proposal # 11-95

Code Section: 440.4(B) Exception (New)

•Proposal 11-95 recommended that the "short circuit current rating" be added as an additional item to be marked on a visible nameplate for Multimotor and Combination Load Equipment. While the proposal was accepted by majority vote in the ROP Meeting, the subsequent letter ballot vote was 7 Affirmative and 7 Negative.

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Proposal # 11-109 **Code Section: 440.65**

•Proposal 11-109 which recommended dropping the requirement for LCDI and AFCI protection for power cords of room air conditioners and requiring them instead to be installed in the branch circuit, was rejected. The panel concluded that the branch circuit means of protection would not provide the desired safety for installation of these units in existing facilities with existing branch circuits.

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Proposal # 11-110 **Code Section: 440.65**

•Proposal 11-110 recommending that Section 440.65 be deleted from the Code was rejected. This section was added to the Code during the 2002 cycle. The panel felt at that time that the requirements of Section 440.65 provided a necessary level of safety for power cords of room air conditioners. The panel has maintained in the 2005 cycle that this protection is still needed.

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NEC Code Making Panel 12 is responsible for:

Articles 610, 620, 630, 640, 645, 647, 650, 660, 665, 668, 669, 670, 685, and Annex D Examples D9 and D10

May 20 & 21, 2003

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At the January 2003 ROP meeting Panel 12 processed 97 proposals.

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Of the 97 proposals

36 were Accepted

43 were Rejected

16 were Accepted in Principle

2 were Accepted in Principle in Part

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Proposal 12-1 Applies to entire NEC

Change "equipment grounding conductor" to "equipment bonding conductor"

CMP 12 realizes this proposal extends beyond the scope of the Panel however several articles under the jurisdiction of CMP 12 will be affected. The Panel wanted to express it's opinion that the new term would be more appropriate.

Two Panel members voted negative and their comments can be seen in the ROP.

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Proposal 12-15 Section 610.61

Panel accepted this proposal "in Principle in Part"

This proposal requires the trolley frame and bridge frame of a crane to be grounded by means of a separate grounding conductor.

The trolley frame and bridge frame can no longer be considered grounded through the the bridge and trolley wheels and its respective tracks.

Three Panel members voted negative and their comments can be seen in the ROP.

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Proposals 12-16, 12-17, 12-18, and 12-19 Section 620.2

Add definitions for Control Room, Control Space, Machine Room and Machinery Space.

Panel accepted these proposals in Principle.

Modifications were made to various Sections of Article 620 in the 2002 NEC using the above terms. The definitions clarify the terms and coordinates their usage with the proposed revisions to A17.1, the Safety Code for Elevators and Escalators.

One Panel member voted negative and his comments can be seen in the ROP.

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Proposal 12-20 and 12-21 Section 620.5

This was an attempt to get a waiver from the working clearances required by Section 110.26.

The Panel strongly objected to any relaxation of the requirements of Section 110.26. Working clearances are extremely important to the safety of workers and should never be compromised.

The Panel rejected this proposal. One Panel member voted negative and his comments can be seen in the ROP.

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Proposal 12-26 Section 620.37(D)

This was an attempt to require wiring connected directly to the firefighters service recall circuits to be within three feet of the elevator controller.

This requirement is already covered in NFPA 72-2002, the National Fie Alarm Code.

Panel 12 rejected the proposal and considered this an issue of supervision and training.

The Panel voted unanimous in rejection of this proposal.

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Proposal 12-33 Section 625.2

This proposal adds “neighborhood electric vehicle” as a new category of electric vehicle. This type of vehicle is required to have automotive grade headlights, seat belts, windshields, brakes and other safety equipment. Top speed is 25 MPH. These vehicles are intended to be used in retirement or other planned communities for short trips for shopping, social and recreational purposes.

Panel 12 voted to accept this proposal . One Panel member voted negative and his comments can be seen in the ROP.

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Proposal 12-34 & 12-35 Sections 625.25 and 625.26(New)

New classes of Hybrid Electric Vehicles are being developed with the capability to use an on-board generation system as either a standby power source or as a source of power production operating in parallel with a primary source of electricity. The acceptance of these proposals will allow these vehicles to serve in this capacity provided they are listed for the purpose of a standby power supply.

The Panel voted unanimous in acceptance.

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Proposal 12-61 Section 645.5(D)(5)

This proposal will allow the power supply cord of listed equipment to be installed under a raised floor in an Information Technology Room without the cord meeting the requirements of DP cable.

The Panel voted to accept in Principle. One member voted negative and his strongly worded and lengthy comments can be seen in the ROP.

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Proposals 12-74 thru 12-88 Article 670

Most of these proposals were the work of a Task Group that consisted of members of CMP 12 and NFPA 79.

The purpose of the Task Group was to increase usability of Article 670 and to better align this Article with NFPA 79, Electrical Standard for Industrial Machinery 2002 Edition.

CMP 12 either accepted or accepted in principle the proposals of the Task Group.

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Proposal 12-89 Section 685.1(2)

This proposal was an attempt to establish a positive guarantee that the safety of persons and property is indisputably assured. The phrase "where the conditions of maintenance and supervision ensure that only qualified persons service the installation" appears approximately 50 times throughout the NEC. The NEC is a prescriptive code and prescriptive requirements must be established to permit the authority having jurisdiction to verify compliance.

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Proposal 12-89 (continued)

Panel 12 voted to reject this proposal . Two Panel members voted negative and their comments can be seen in the ROP.

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CMP-13

Chair-Thomas H. Wood

Articles 445, 455, 480, 690, 692, 695, 700, 701, 702, 705

Acted on 154 Proposals

Developed 3 Panel Proposals

May 20 & 21, 2003

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Proposal #:13-5 NEC Section: 445.11

Each generator shall be provided with a nameplate giving the manufacturer's name, the rated frequency, power factor, number of phases if of alternating current, **the subtransient and transient impedances**, the rating in kilowatts or kilovolt amperes, the normal volts and amperes corresponding to the rating, rated revolutions per minute, insulation system class and rated ambient temperature or rated temperature rise, and time rating.

Revisions to 70E will require calculation of arc energy for electrical equipment. The generator impedance value will be needed for this calculation.

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Proposal #:13-7 NEC Section: 445.18

Generators shall be equipped with **disconnect(s)** by means of which the generator and all protective devices and control apparatus are able to be disconnected entirely from the circuits supplied by the generator except where: ... "

If this were done then two or three circuit breakers, at the generator, feeding different transfer switches, could be installed. This would add needed flexibility in certain situations. It would also allow portions of the emergency system to be more easily maintained without the need to take the entire system out of service and given the difficulty in getting needed shutdowns in facilities like hospitals and data centers, the overall reliability of those systems would be enhanced due to the (relative) ease in arranging needed shutdowns

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Proposal #:13-23 NEC Section: 690.2

Building Integrated Photovoltaics. Photovoltaic cells, modules, devices, or material: (1) in direct contact with the outer surface of a building or (2) serving as the outer surface of a building.

Defines a type of photovoltaic product being installed throughout the country. Listed products are available and more are expected to be commercially available in the future.

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Proposal #:13-31 NEC Section: 690.7(C)

(C) Photovoltaic Source and Output Circuits. In one- and two-family dwellings, **photovoltaic** source circuits and photovoltaic output circuits that do not include lampholders, fixtures, or receptacles shall be permitted to have a maximum **photovoltaic** systems voltage up to 600 volts. Other installations with a maximum photovoltaic systems voltage over 600 volts shall comply with Article 690, Part I.

The definition of "systems voltage" does not appear in the NEC. The defined use of Photovoltaic Systems Voltage allows the user to readily determine the required operating threshold of the photovoltaic system. The NEC defines the maximum operating voltage in Article 690.7(A). There seems to be some confusion over the voltage level that may be present in photovoltaic source circuits and photovoltaic output circuits. By utilizing the defined Photovoltaic systems voltage in the article, the meaning of the NEC is clear.

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Proposal #:13-36 NEC Section: 690.14(D)

690.14(D) Utility-Interactive Inverters Mounted in Not-Readily-Accessible Locations. Utility-interactive inverters shall be permitted to be mounted on roofs or other exterior areas that are not readily accessible. These installations shall comply with (1) through (4).

(1) A direct current photovoltaic disconnecting means shall be mounted near or in the inverter.

(2) An alternating current disconnecting means shall be mounted near or in the inverter.

(3) The alternating current output conductors from the inverter and an additional alternating-current disconnecting means for the inverter shall comply with 690.14(C)(1).

(4) A plaque shall be installed in accordance with Section 225.37.

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Proposal #:13-36 (con't) NEC Section: 690.14(D)

Several utility-interactive inverters have outdoor-rated enclosures. These inverters may be mounted near the photovoltaic array and may even be mounted on the roofs of dwellings or other buildings in areas that are not readily accessible. AC and dc disconnecting means are still required to service the inverter and should be located near or in the inverter, but they need not be readily accessible. The ac outputs of these inverters should be considered as outputs of the photovoltaic system and these circuits treated the same as any other supply for the building; e.g., the routing of the conductors and the location of the disconnect should be established by 690.14(C)(1). This type of installation may even be safer than an installation where the dc photovoltaic source circuits have to be run some distance from photovoltaic array to a remotely located, readily accessible dc disconnect located near the inverter. In the case of an inverter mounted near the photovoltaic array, opening the readily accessible ac disconnect ensures that all conductors except those dc photovoltaic source and output conductors (near the photovoltaic array) are unenergized. The proposed revisions to 690.14(C)(1) and 690.31(F) will also permit these ac inverter output conductors to be run inside a building or structure when they are contained in metal conduits or enclosures.

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Proposal #:13-38 NEC Section: 690.17 Exception No.1

~~A disconnecting means located on the dc side shall be permitted to have an interrupting rating less than the current-carrying rating where the system is designed so the dc switch cannot be opened under load.~~

Faults in the inverter and in the wiring between the switch and the inverter or other equipment (required to be simulated by Underwriters Laboratories (UL) Standards Testing Protocols) prohibit the application of the exception. UL testing for photovoltaic disconnect switches requires that a short circuit be applied to the output of the switch and that the disconnect switch interrupt the short-circuit current numerous times before the switch can be used in a dc photovoltaic disconnect application. This testing requirement effectively says that the switch must be load-break rated (or better yet, short-circuit current rated) and this nullifies 690.17 Exception No. 1.

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Proposal #:13-41 NEC Section: 690.31(F)

Direct Current Photovoltaic Source and Output Circuits Inside Building. Where direct current photovoltaic source or output circuits or the alternating current outputs of a utility-interactive inverter from building integrated or other photovoltaic system are run inside a building or structure, they shall be contained in metallic raceways or metallic enclosures from the point of penetration of the surface of the building or structure to the first readily accessible disconnecting means. The disconnecting means shall comply with 690.14(A) through (C).

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Proposal #:13-41(con't) NEC Section: 690.31(F)

Building integrated photovoltaic systems (defined in a new definition in 690.2) may have multiple penetration points in the surface of a building or structure. For even a small residential system, the penetrations may number in the hundreds. It is not possible to install an accessible disconnect at each point of penetration. Keeping these dc PV source and output circuits or other dc source and output circuits from roof-mounted PV arrays in metallic raceways and or metallic enclosures from the point of penetration to the first readily accessible disconnect will meet the intent of the NEC for electrical shock and fire hazard safety for these circuits. Routing the ac outputs of remotely located utility-interactive inverters in metallic raceways or enclosures will also increase the safety of these circuits. The metallic enclosures may be needed in some systems to hold blocking diodes, overcurrent devices, and other equipment allowed in these circuits before the PV disconnect by 690.14(B). Metallic raceways and enclosures provide greater mechanical protection and fire hazard reduction than do nonmetallic raceways and enclosures for these circuits that may be energized any time the PV materials are exposed to light.

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Proposal #:13-47 NEC Section: 690.47(C)

690.47(C) Systems with Alternating Current and Direct Current Grounding Requirements. Photovoltaic power systems with both alternating current and direct-current (dc) grounding requirements shall be permitted to be grounded as described in (1) or (2).

(1) A grounding-electrode conductor shall be connected between the identified dc grounding point to a separate dc grounding electrode. The dc grounding-electrode conductor shall be sized according to 250.166. The dc grounding electrode shall be bonded to the ac-grounding electrode to make a grounding electrode system according to 250.52 and 250.53. The bonding conductor shall be no smaller than the largest grounding electrode conductor, either ac or dc.

(2) The dc grounding electrode conductor and ac grounding electrode conductor shall be connected to a single grounding electrode. The separate grounding electrode conductors shall be sized as required by 250.66(ac) and 250.166(dc).

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Proposal #:13-47(con't) NEC Section: 690.47(C)

The NEC addresses the grounding of ac systems and dc systems in separate sections. The NEC does not specifically address systems where both dc and ac grounding must be made in the same system. In photovoltaic systems there are usually both dc and ac circuits/systems that need to be grounded. If the equipment-grounding system is connected in a manner that no ground-fault currents can normally flow through the grounding electrode conductor, then the intent of the code is met; grounding electrode conductors and grounding electrodes do not carry ground-fault currents, only lightning induced surge currents and currents from accidental cross connection to other systems. If no ground-fault currents travel in grounding electrode conductors, then the sizing requirements apply from NEC Sections 250.66(ac) and 250.166(dc). This proposal allows two clearly specified approaches to provide ac and dc system grounding and eliminates confusion on these techniques found in Article 250 when it comes to systems with both ac and dc grounding requirements.

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Proposal #:13-67 NEC Section: 692.1

These systems may have ac or dc output for utilization.

Fuel cells have a dc output, which may be inverted into an ac output or converted (via a dc-dc converter) to a usable dc output. The proposed wording, taken from 690.1, reflects that.

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Proposal #:13-69 NEC Section: 692.15

Requirements for Disconnecting Means of Inverter Output Circuit. Means shall be provided to disconnect all conductors of the fuel cell system output circuit from the point of common coupling. A single disconnecting means in accordance with 692.17 shall be permitted for the combined AC output of one or more inverters. Disconnect shall be adjacent to or grouped with the utility disconnecting means at the point of common coupling.

Given that most utilities are requiring the installation of disconnecting means to allow manual separation of photovoltaic output circuit(s) and the electrical production and distribution network, it stands to follow that as fuel cell systems are installed they will be required to follow the same requirements as photovoltaic systems. Frequently, the disconnecting means specified in the NEC does not require a disconnecting means to be installed exterior to the building or structure to allow "line crews" to manually "lock out" fuel cell output circuit conductors.

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Proposal #:13-76 NEC Section: 692.54

The location of the manual fuel shutoff valve shall be **marked** at the location of the primary disconnecting means of the building or circuits supplied.

This is an editorial correction. The word "marked" was inadvertently left off of the version of this section that went for publication.

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Proposal #:13-86 NEC Section: 695.4(B)(2)

(2) Disconnecting Means. The disconnecting means shall comply with all of the following:

(1) Be identified as suitable for use as service equipment

(2) Be lockable in the closed position

(3) Not be located within equipment that feeds loads other than the fire pump

(4) Be located sufficiently remote from other building or other fire pump source disconnecting means such that inadvertent contemporaneous operation would be unlikely.

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Proposal #:13-86 (con't) NEC Section: 695.4(B)(2)

Equipment manufacturers are requested to provide various panelboard and switchboard custom configurations from customers located across the country. Our experience has found the wording "located sufficiently remote" in the present 695.4(B)(2)(3) has a varying degree of interpretation across the country which includes: 1) located within a panelboard feeding various loads with the fire pump disconnect located at the bottom of the panel (sufficiently remote?), 2) located within a switchboard structure feeding various loads either at the bottom of a single section (sufficiently remote?) or in a separate section of an assembly (sufficiently remote?), 3) located as a separate enclosure. Adding item (3) will clarify that a fire pump disconnect is not permitted in a panelboard or switchboard that feeds other loads in order to ensure continuity of power and further support the appropriate interpretation of "sufficiently remote" in newly numbered Item (4) above.

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Proposals #:13-85,13-88,13-89 NEC Sections: 695.4(B)(1), 695.5(B) & 695.5(C)(2)

(1) Overcurrent Device Selection. The overcurrent protective device(s) shall be selected or set to carry indefinitely the sum of the locked-rotor current of the fire pump motor(s) and the pressure maintenance pump motor(s) and the full-load current of the associated fire pump accessory equipment when connected to this power supply. **The requirement to carry the locked-rotor currents indefinitely shall not apply to conductors and any other devices in the fire pump motor circuit(s).**

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Proposals #:13-85,13-88,13-89 NEC Sections: 695.4(B)(1), 695.5(B) & 695.5(C)(2)

The requirement to size overcurrent protective devices to carry indefinitely the sum of the locked-rotor current of the fire pump motor(s), the pressure maintenance pump motor(s), the full-load current of the associated fire pump accessory equipment, and in some cases the remaining loads supplied by the transformer is being applied incorrectly to conductors and other devices in the fire pump motor circuits.

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Proposal #:13-100 NEC Section: 695.6(C)(2)

(2) Fire Pump Motors Only. ~~Conductors supplying only a fire pump motor(s) shall have a rating not less than 125 percent of the fire pump motor(s) full load current(s)~~. **Conductors supplying only a fire pump motor shall have a minimum rating in accordance with 430.22. Larger conductors may be necessary to satisfy the requirement in 695.7.**

Current 695.6(C)(2) offers no guidance for selection of conductors for reduced-voltage start motors. Reference to 430.22 provides requirements for sizing conductors for both across-the-line and reduced voltage start motors. Reference also reemphasizes that sizing is based on motor full-load current and not overcurrent protective device settings.

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Proposal #:13-105 NEC Section: 695.6(H)

Ground Fault Protection of Equipment. Ground fault protection of equipment shall not be permitted for fire pumps.

The text in 215.10 Exception No. 2, 230.95 Exception No. 2, and 240.13 which states that the requirements of these sections shall not apply to fire pumps is not sufficient to mandate that ground fault protection of equipment for fire pumps shall not be permitted.

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Proposal #:13-110 NEC Section: 700.6(A)

Transfer equipment, including automatic transfer switches, shall be automatic, **listed** for emergency use, and approved by the authority having jurisdiction.

Note: Same change accepted for 701.7(A)(13-138)

By substituting the term "listed" for the presently used "identified" which are both defined terms, this proposal intends to require that this equipment be subject to periodic follow-up inspection of production equipment to ensure suitability for emergency purposes.

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Proposal #:13-118 NEC Section: 700.9(D)(1)

Emergency-circuit wiring shall meet one of the following conditions.

Critical fire protection systems require operational integrity throughout the duration of a fire. Because of this, numerous codes and standards, including various model building codes and other NFPA documents require that all portions of the power wiring fed from the Article 700 complying system have a suitable level of circuit integrity and survivability. It is of utmost importance that NFPA 70, National Electrical Code, offer a code-complying method of meeting these requirements. The current wording limits the circuit integrity and survivability feature to feeder circuits. It is crucial that the NEC make provision for circuit integrity and survivability to apply to all portions of the power wiring in order to provide supportive correlation with the other codes and standards that require this.

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Proposal #:13-128 NEC Section: 700.12(E)

Fuel Cell System. Fuel cell systems used as a source of power for emergency systems shall be of suitable rating and capacity to supply and maintain the total load for not less than 2 hours of full-demand operation. Installation of a fuel cell system shall meet the requirements of Article 692. Where a single fuel cell system serves as the normal supply for the building or group of buildings concerned, it may not serve as the sole source of power for the emergency standby system.

Note: Similar text also accepted for 701.11(F)(13-143)

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Proposal #:13-128 (con't) NEC Section: 700.12(E)

It seems clear that the present pace of research, development, and testing of fuel cell technology will have matured to the point where such systems may be in general use by the 2005 through 2007 code cycle. Reliability is matched to already existing sources of power for emergency standby systems. For reference, I have provided an article from the January issue of Electrical Contractor Magazine, Fuel Cells Now: An Update. It, along with the material referenced in the article supports the need of this code provision.

The above proposal would be a logical insertion, moving the existing 700.12(E) to become 700.12(F). Code language mirrors that of the rest of the article. The 2 hour requirement mirrors that of 700.12(B)(2). It seems logical to have the same time requirement of this fuel source.

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Proposal #:13-134 NEC Section: 700.27

700.27 Series Rated Combinations.

Series Rated Combinations shall not be used in emergency systems.

Note: Same text added in 701.18 (13-144) for legally required standby systems

Series Rated Combinations use two devices to clear a fault, both the upstream fuse or circuit breaker and the downstream circuit breaker. If a fault occurs on an emergency system, the operation of the upstream device could take down the entire emergency system. This would create a situation that is unsafe for human life and violate the scope of Article 700. Series Rated Combinations must not be allowed in emergency systems for this reason.

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Proposal #:13-135 NEC Section: 700.28

Coordination. Emergency system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices.

Note: Same text added in 701.19 (13-145) for legally required standby systems.

Panel Statement: The panel agrees that selective coordination of emergency system overcurrent devices with the supply side overcurrent devices will provide for a more reliable emergency system. By excepting in principle this proposal the FPN in Section 700.25 is no longer needed to alert users about selective coordination. The part the panel accepts is selective coordination of emergency systems. The panel's wording accomplishes the intent of the submitter without adding design aspects of selective coordination into this section.

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Proposal #:13-148 NEC Section: 702.6

Exception: Temporary connection of a portable generator without transfer equipment shall be permitted in industrial installations, with written safety procedures, where conditions of maintenance and supervision insure that only qualified persons service the installation and where the normal supply is physically isolated by a lockable disconnect means or by disconnection of the normal supply conductors.

When installed by qualified personnel in an industrial environment, a generator connected temporarily to an existing distribution system which has been properly isolated from the normal supply and locked out provides a safe source of portable power.

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Proposal #:13-149 NEC Section: 702.7

Exception: Signals shall not be required for portable standby power sources.

This section made perfect sense when only permanently installed sources were included in the scope of Article 702. Now that portable sources are included, there is no point in signaling derangement or carrying load in a system that must be manually connected and may not even be on site until a power outage occurs. Essentially, for a portable source, it is always "deranged" until connected and the fact that it is carrying load is obvious to the user who had to hook it up. In some cases, the same generator may not even be used for each event, or there may only be a provision for hooking up a generator in the event the user chooses to acquire one. Furthermore, many if not most small portable generators sold and used for this purpose have no provision for furnishing an external signal when carrying load.

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Proposal #:13-152 NEC Section: 702.11

IV. Sources of Power

702.11 Outdoor Generator Sets. 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 enter or pass through the building or structure.

The new Part would permit the disconnecting means for the generator to act as the required disconnecting means for the circuit entering or passing through a separate building or structure as required by 225.31 with the same text as provided for generator sets for emergency and legally required standby generators.

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Significant Proposals and Actions

For CMP-14

Panel 14 acted on 146 public proposals and 14 panel proposals. This presentation will provide a brief discussion of the most significant proposals that were accepted in the ROP phase of the 2005 NEC cycle.

May 20 & 21, 2003

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Proposal 14-8

NEC 500.2

The 2002 NEC definition in 500.2, for “Purged and Pressurized”, only includes text related to purging an enclosure. The additional text, also extracted from NFPA 496, clarifies that the protection technique includes both purging and pressurizing the enclosure.

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Proposal 14-11

NEC 500.5(C)(2)

The revised text changes the definition of a Class II, Division 2 location from a paragraph with fragments separated by commas and conjunctions that was difficult to interpret, to a list format that clearly defines the conditions that result in a Class II, Division 2 location.

May 20 & 21, 2003

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Proposal 14-13

NEC 500.7(K)

The revised text clarifies that a gas detection system must include items included in recommended practices that involve maintenance and operation requirements, in addition to installation requirements, for the protection technique to operate safely. All of these items must be documented before the protection technique is accepted.

May 20 & 21, 2003

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Proposal 14-20

Article 501

The revised text provides a scope for the article and compliance with the NEC Style Manual in several ways. The parallel numbering for Articles 501, 502 & 503 will make it easier for users to find requirements as they move from one article to another.

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Proposal 14-27

NEC 501.10(B)(1)(3)

New permission for rigid nonmetallic conduit in Class I, Division 2 locations is provided, including a FPN to emphasize the significance of following all of the installation requirements in Article 352. There was discussion about expansion and contraction causing rigid nonmetallic conduit to pull apart at fittings. It was determined that any wiring method could be misapplied and become unsafe. If all of the installation requirements located in Article 352 are complied with, rigid nonmetallic conduit can be used safely. It's resistance to corrosion will be an improvement in many corrosive, chemical environments. In Division 2 locations, ignitible concentrations only occur in abnormal conditions.

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Proposal 14-34

NEC 501.15(B)(2)

Where a boundary seal is not also completing an explosionproof enclosure, there is no technical reason for the seal to be explosionproof. In a Division 2 location, the conduit would only have gases or vapors in an abnormal condition. The likelihood of having gases or vapors in a Division 2 location conduit and having an electrical fault to provide an ignition source simultaneously is very remote. The NEC will now consider this an acceptable risk. The only purpose for the seal is to minimize the amount of gas or vapor within the Division 2 location that can pass to an unclassified area.

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Proposal 14-40

NEC 501.15(F)(3)

NEC 501.15(F)(3) will now include two options for process sealing. The option located in the (a) part is the new text and includes instruments that are listed as and marked “Dual Seal”. The option of providing an additional external seal is now located in the (b) part. This will continue to give manufacturers of single seal devices an opportunity to provide these devices and the installers provide the external seal. In the past, it was implied that a device that was dual sealed was not required to have an additional external seal, but there was no listing and marking requirement to determine the reliability of a manufacturers claim to a dual sealed device.

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Proposal 14-47

NEC 501.10(B)(7)

A non-shielded MV cable has a surface discharge from the cable surface to any ground plane (such as metal cable tray). This discharge is an ignition source that can cause an explosion in the event of gas or vapors being present. The new wording will require the single conductor MV cable to have a shield or metallic armor to provide a ground plane. This ground plane will eliminate any external electrical discharge thus eliminating the ignition source and precluding any possibility of creating an explosion.

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Proposal 14-52

Article 502

The revised text provides a scope for the article and compliance with the NEC Style Manual in several ways. The parallel numbering for Articles 501, 502 & 503 will make it easier for users to find requirements as they move from one article to another.

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14-61

Article 503

The revised text provides a scope for the article and compliance with the NEC Style Manual in several ways. The parallel numbering for Articles 501, 502 & 503 will make it easier for users to find requirements as they move from one article to another.

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Proposal 14-63

NEC 503.10(A)(3)

The wiring methods in Class III, Division 1 locations are very similar to those found in Class II, Division 2 locations. Nonincendive field wiring was added to Class I, Division 2 and Class II, Division 2 in the 2002 code cycle. This change will permit the same applications to be applied in Class III, Division 1 locations.

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Proposal 14-67

NEC 504.10(B)

In the 2002 NEC, CMP-14 included an exception in 504.4 that says: Simple apparatus, as described on the control drawing, shall not be required to be “listed.” This change will provide guidance for installers and inspectors to evaluate this equipment in the field.

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Proposal 14.79

NEC 505.18(A)

The new test clarifies that all conductors that enter an increased safety enclosure must be terminated in an increased safety terminal. It was not clear before that spares were required to be terminated in an increased safety terminal or if they could be taped or terminated with a wire nut or some other means. This protection technique is based on the quality of conductor terminations within an enclosure. These listed terminals greatly minimize the chance of terminations within an enclosure becoming an ignition source.

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Proposal 14-85

NEC 505.8(I)

The revised text clarifies that a gas detection system must include items that are part of recommended practices that involve maintenance and operation requirements, in addition to installation requirements, for the protection technique to operate safely. All of these items must be documented before the protection technique is accepted.

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Proposal 14-100

NEC 505.15(C)(1)(B)

A non-shielded MV cable has a surface discharge from the cable surface to any ground plane (such as metal cable tray). This discharge is an ignition source that can cause an explosion in the event of gas or vapors being present. The new wording will require the single conductor MV cable to have a shield or metallic armor to provide a ground plane. This ground plane will eliminate any external electrical discharge thus eliminating the ignition source and precluding any possibility of creating an explosion.

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Proposal 14-108(a)

Article 506

This proposal will add a new Article 506 to provide an alternate method of addressing concerns for electrical installations in atmospheres where fire and explosion hazards may exist due to flammable dusts, fibers and flyings. This would be an alternative to the requirements located in Articles 500, 502 and 503 for electrical installations in these environments.

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Proposal 14-110

NEC 555.22

A proposal was submitted to 511.1 to include motorboats in the parenthetical list of self-propelled vehicles and therefore require compliance with NEC Article 511 for repair shops that work on this equipment. CMP-14 indicated that motorboat repair shops were already covered by 511, as they are “self-propelled vehicles” and recommended additional text in Article 555 to clarify that question.

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Proposed Text for 555.22

555.22. Repair Facilities - Hazardous (Classified) Locations. Electrical wiring and equipment located at facilities for the repair of marine craft containing flammable or combustible liquids or gases shall comply with Article 511 in addition to the requirements of this article.

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Proposal 14-111

NEC 511.3

NEC 511.3 has been reorganized so that all text related to unclassified locations within commercial garages is now located in 511.3(A) and all text related to classified locations is now located in 511.3(B). Some of the text in past editions was included as exceptions, some was located in Article 514 and some was already in 511.3 (A) or (B).

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Proposal 14-115

NEC 511.4

NEC 511.4(A) (1) and the exception will be deleted. This eliminates the text that indicated the space within a slab or masonry wall or below the slab was a Class I Location in some conditions. The definition of a Class I location in Article 500 requires an ignitible concentration of fuel and air be present for a classified location to exist. It was determined that unless there was a void in these areas where air could collect, there would not be enough oxygen to create an ignitible concentration. Now the applicable rules for wiring and sealing, located in Article 501 will apply to raceways entering classified locations from the unclassified areas within or below a slab.

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Proposal 14-122

NEC 514.8

This revision will eliminate the text that indicates the space within the earth, below a classified area, is a Class I Location. The definition of a Class I location in Article 500 states an ignitible concentration of fuel and air must be present for a classified location to exist. It was determined that unless there was a void in these areas where air could collect, there would not be enough oxygen to create an ignitible concentration. Now the requirements for raceways installed under the classified areas include a seal where the raceway emerges from below grade, but does not classify the space that does not include enough oxygen to reach an ignitible concentration.

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Proposal 14-132

NEC 513.12

This new section adds GFCI protection for 15 & 20 ampere, 125 volt, single phase, 50/60 Hz. receptacles that are installed in aircraft hangers. To avoid confusion, CMP-14 limited the requirement to 50/60 Hz devices. Many hangers include 400 Hz equipment which were determined not to be compatible with GFCI protection.

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14-136

Notes to Table 514.3(B)(1)

The new note, extracted from NFPA 30A provides a definition of grade level where gasoline dispensers are installed on over-water piers at marinas rather than on the land. This note will provide enforceable text in the NEC where local enforcement authorities only adopt the NEC and do not adopt other referenced standards such as NFPA 30A.

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Proposal 14-145(a)

NEC 516.3

The revision to include Zone applications in spray areas is the responsibility of the NFPA 33 committee. They have included the Zone concept as an option in the 2003 edition of that standard. Article 516 was revised to correlate the documents.

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Responsible for Articles 517, 518, 519, 520, 525 and 530

A Total of 114 Proposals Acted on

- 4 on Entire Document
- 56 for Article 517
- 19 for Article 518
- 1 for Article 519
- 16 for Article 520
- 13 for Article 525
- 4 for Article 530
- 1 for Annex G

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Proposal 15-14 (517.10(B)(2)) Would require that all branch circuits that supply 125 volt, 15- and 20-ampere outlets in patient sleeping areas of nursing homes to be protected by an arc-fault circuit interrupter.

Panel action was to reject. There is significant differences between nursing home sleeping areas and dwelling sleeping areas. Nursing homes are held to higher construction standards including sprinklers.

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Proposal 15-18 (517.13(A)) – Would have permitted the use of specially constructed size 14, 12, or 10 AWG Type MC cable consisting of combined interlocking armor and grounding conductor in lengths not exceeding 100ft. in patient care areas.

The panel rejected this proposal indicating that patient care area wiring methods require two independent ground return paths., and that interlocking armor does not of itself provide the redundant ground path.

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The panel received multiple proposals (15-25, 15-26, 15-27, 15-28, all dealing with section 517.17(A)(1)) to clarify when and where a second level of ground fault protection is required.

The panel developed panel proposal 15-24a which effectively rewrites 517.17(A). It clarifies that 517.17 applies "to hospitals and other buildings housing critical care areas or utilizing life support equipment, and in buildings which provide essential utilities or services for the operation of critical care areas or electrical life support equipment." The panel also pointed out to Panels 2 and 4 of the need for a FPN to 215.10 and 230.95 referencing the special requirements of 517.17

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Proposal 15-42 (517.30 C(3)) introduced the use of listed Type MC cable and listed Type AC cable as acceptable wiring methods for emergency systems in hospitals.

The panel accepted this proposal in principle, limiting the use of Types AC and MC cables to existing installations where it is impractical to install non-flexible metal raceway.

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Article 518

The panel decided to re-title Article 518 to "Assembly Occupancies" and to make the scope statement consistent with NFPA 1, NFPA 101 and NFPA 5000.

518.1 Scope: Except as required in Articles 520, 525 and 530, the provisions of this article shall apply to electrical construction and installation criteria in all buildings or portions of buildings or structures designed or intended for the assembly or gathering together of 100 or more persons for such purposes as deliberation, worship, entertainment, eating, drinking, amusement, awaiting transportation or similar purposes."

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518 Title & Scope (cont'd)

Proposals 15-57, 15-60, and 15-63 were developed as the result of a task group activity, made up of members of NPFA 101 and NFPA 5000 and the chair of CMP-15.

The task group was of the opinion that there should be consistency in definition to the greatest extent possible while also realizing that there may be differences within respective codes due to related considerations (life safety, construction, etc.)

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Report of CMP-16

Stanley D. Kahn – Chairman

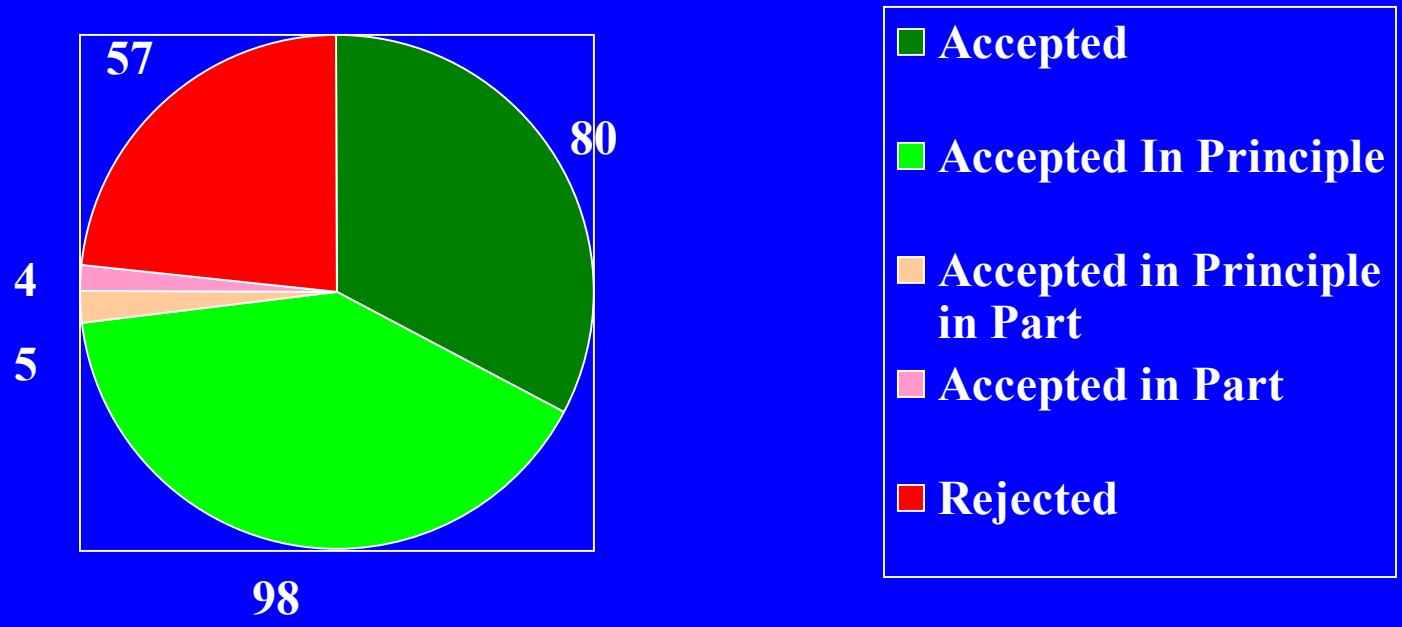
Dr. Stanley Kaufman - Presenter

Articles Covered

- 770 - Optical Fiber Cables & Raceways
- 800 - Communications Circuits
- 810 – Radio & Television Equipment
- 820 – CATV & Radio Distribution Systems

- 830 – Network–Powered Broadband Communications

Summary of Proposals
238 submitted; 6 panel proposals



CMP 16 Meeting Agenda (25 Groups of Proposals)

1. Restructuring (44 proposals)

Restructuring

- 2003 NEC Style Manual 2.4.1
  - Parallel Numbering Within Similar Articles.
    "To the extent possible, Code-Making Panels are encouraged to use the same section numbers (and part numbers, where applicable) for the same purposes within articles covering similar subjects.
- Objective-Consistent numbering of sections in Articles 725, 760, 770, 800, 820 & 830
  - Panel 3 is responsible for Articles 725 & 760.
  - TCC forming a CMP 3 & 16 task group to expand the numbering scheme to allow for insertion of future sections

Restructuring

General Arrangement (Articles 800, 820 & 830)

I. General

II. Wires & Cables Outside & Entering Buildings

III. Protection

IV. Grounding Methods

V. Wires & Cables Within Buildings

VI. Listing Requirements

(Article 770 is similar.)

CMP 16 Meeting Agenda (25 Groups of Proposals)

1. Restructuring (44 proposals)
2. Editorial (25 proposals)

Editorial Changes

- Simplified cable marking and substitution tables
  - Removed “Use and References” columns
- Clarified cable removing requirement
  - Revised “The accessible portion of abandoned optical fiber cables shall not be permitted to remain.” to “The accessible portion of abandoned optical fiber cables shall be removed.”
- Corrected errors in 2002 Code dealing with the removal of abandoned cable
  - General removal requirement in sections xxx.3.

CMP 16 Meeting Agenda (25 Groups of Proposals)

1. Restructuring (44 proposals)
2. Editorial (25 proposals)
3. Fine Print Notes for plenum cables and raceways (12 proposals)

Fine Print Notes – Fire Testing

- Added fine print notes for fire testing of general purpose, riser and plenum raceways
- FPN for plenum raceway and cables refer to NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems*
  - Standards Council had assigned primary responsibility for combustibles in plenums to NFPA 90A Committee
- Panel objective - correlation with NFPA 90A

CMP 16 Meeting Agenda (25 Groups of Proposals)

1. Restructuring (44 proposals)
2. Editorial (25 proposals)
3. Fine Print Notes for plenum cables and raceways (12 proposals)
4. Restricting outside plant cable installations in buildings and definitions of ducts and plenums (10)

Restricting Outside Plant Cable Installations in Buildings

Exceptions to sections 770.50, 800.50 & 820.50 permit 50 feet on unlisted (outside plant) cable to extend beyond the "point of entrance"

- Non-fire-resistant outside plant cable permitted to be installed in risers, air ducts and all kinds of plenums.

800.50 Exception 3 – 2002 NEC

Exception No. 3: Listing and marking shall not be required where the length of the cable within the building, measured from its point of entrance, does not exceed 15 m (50 ft) and the cable enters the building from the outside and is terminated in an enclosure or on a listed primary protector.

Revised 800.50 Exception 3

Unlisted outside plant communications cables shall be permitted within buildings in spaces other than risers, air ducts, ceiling cavity plenums, raised floor plenums, duct distribution plenums, apparatus casing plenums and air-handling unit plenums where the length of the unlisted cable within the building, measured from its point of entrance, does not exceed 15 m (50 ft) and the cable enters the building from the outside and is terminated in an enclosure or on a listed primary protector.

New Definitions Accepted

Term	Source
Air Duct	NFPA 90A-2002, 3.3.5
Ceiling Cavity Plenum	NFPA 90A-2002, 4.3.10.2
Raised Floor Plenum	NFPA 90A-2002, 4.3.10.6.1
Duct Distribution Plenum	NFPA 90A-2002, 4.3.10.3
Apparatus Casing Plenum	NFPA 90A-2002, 4.3.10.4
Air-Handling Unit Plenum	NFPA 90A-2002, 4.3.10.5

CMP 16 Meeting Agenda (25 Groups of Proposals)

5. Listing requirements for, and applications of, plenum cables (20)

Air-Conditioning Committee Proposal for 800.53(A)

- 2002 NEC
  - **Plenum.** Cables installed in ducts, plenums, and other spaces used for environmental air shall be Type CMP. ….
- Proposal for 2005 NEC
  - **Ceiling Cavity Plenums and Raised Floor Plenums**. Cables installed in ceiling cavity plenums and raised floor plenums shall be Type CMP. …..

Air-Conditioning Committee Proposal for 800.51(A)

- 2002 NEC
  - **Type CMP**. Type CMP communications plenum cable shall be listed as being suitable for use in ducts, plenums, and other spaces used for environmental air and shall also be listed as having adequate fire-resistant and low smoke-producing characteristics.

Air-Conditioning Committee Proposal for 800.51(A) (continued)

- Proposal for 2005 NEC
  - **Type CMP.** Type CMP communications plenum cable shall be listed as being suitable for use in ceiling cavity plenums and raised floor plenums and shall also be listed as having adequate fire-resistant and low smoke-producing characteristics.

Air-Conditioning Committee Proposals

- Delete:
  - "ducts, plenums and other spaces used for environmental air"
- Replace with:
  - "ceiling cavity plenums and raised floor plenums"

Conflict Eliminated!

2002 NEC (Articles 770, 800, 820, 830)
Ducts, Plenums and Other Space Used For Environmental Air

Air Duct	Plenum, Air Handling Unit Room	Plenum, Apparatus Casing	Plenum, Duct Distribution	Plenum Raised Floor	Plenum Ceiling Cavity	Other Space Used For Environmental Air

2002 NFPA 90A, Ceiling Cavity and Raised Floor Plenums

Conflict	Correlation

Proposals Inconsistent with the Air-Conditioning Committee Proposals

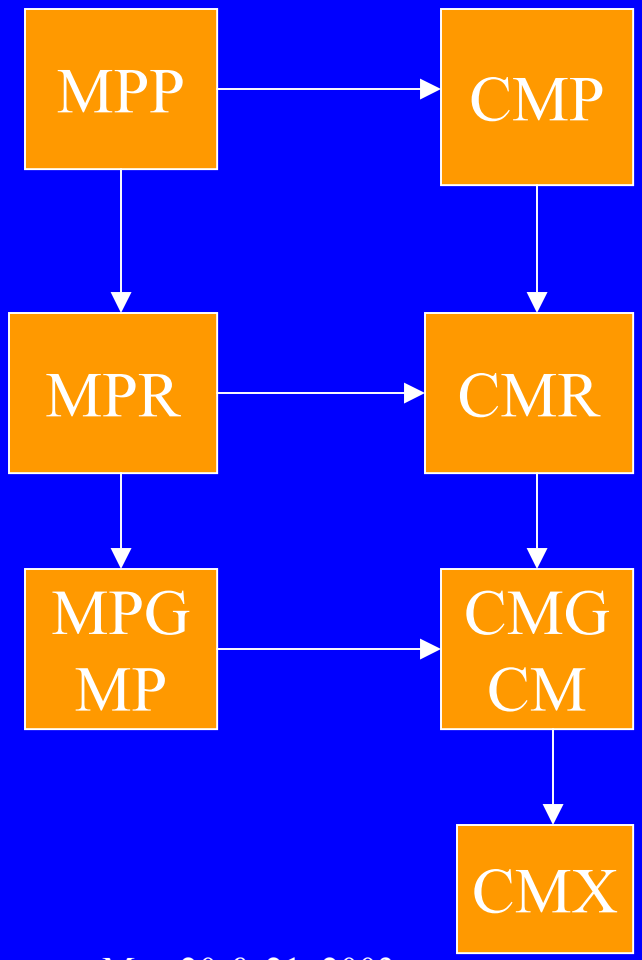
- Delete:
  - "ducts, plenums and other spaces used for environmental air"
- Replace with:
  - "plenums, including ceiling cavity plenums and raised floor plenums"
- Rejected because of a conflict with NFPA 90A

CMP 16 Meeting Agenda (25 Groups of Proposals)

5. Listing requirements for, and applications of, plenum cables (20)
6. Elimination of "G" and "MP" cables (2)

Elimination of "G" and "MP" Cables

Multipurpose and "G" cables do not have unique applications.



Elimination of Multipurpose and General Purpose "G" Cables

- Panel eliminated cable types for consistency with previous Correlating Committee ruling that there must be specific applications for a cable type to be listed.
- Panel has requested that the TCC reconsider its directive so that they can reverse this action and keep "G" cables in the NEC.
  - "G" cables were introduced to harmonize with the Canadian Electrical Code.

Elimination of Multipurpose and General Purpose "G" Cables

- The TCC decided that their previous ruling was not retroactive, therefore these cable types could be retained.

Circuit Integrity Cables

- Panel 16 accepted a proposal to establish 2-hour fire-rated communications circuit integrity cable without a requirement for its use
- TCC Issue

CMP 16 Meeting Agenda (25 Groups of Proposals)

5. Listing requirements for, and applications of, plenum cables (20)
6. Elimination of "G" and "MP" cables (2)
7. Listing requirements for, and applications of, air duct cables (59)

Air Duct Cables

- Listed for use in air ducts and all kinds of plenums
- Permitted for use in air ducts, duct distribution plenums, apparatus casing plenums and air-handling unit room plenums where associated with the function of the air distribution system

Air Duct Cables (Continued)

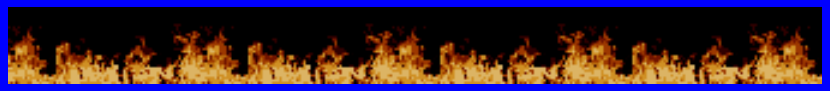
- Required in new inaccessible ceiling cavity plenums
- New cable substitution hierarchy, air duct cables permitted to substitute for plenum cables
- Correlates with NFPA 90A requirements

CMP 16 Meeting Agenda (25 Groups of Proposals)

5. Listing requirements for, and applications of, plenum cables (20)
6. Elimination of "G" and "MP" cables (2)
7. Listing requirements for, and applications of, air duct cables (59)
8. Raceway, equipment mounting & barriers (19 proposals)

Raceways

- CATV plenum raceways approved for use in ceiling cavity and raised floor plenums
- Listed optical fiber raceways approved for use as innerduct
- Required firestopping of unlisted outside plant optical fiber innerduct at the point of entrance



CMP 16 Meeting Agenda (25 Groups of Proposals)

9. ITC cable (4 proposals)

ITC Cable

- Panel rejected proposals that would permit Instrumentation Tray Cables (Article 727) in the same enclosure or cable tray with Class 2, Class 3, power-limited fire alarm, communications or CATV cables.

- Panel accepted proposal to permit ITC cables to mix with nonconductive optical fiber cables.

CMP 16 Meeting Agenda (25 Groups of Proposals)

9. ITC cable (4 proposals)
10. Mechanical Execution of Work & Access to Equipment Behind Panels (11 proposals)

Mechanical Execution of Work 800.6

Communications circuits and equipment shall be installed in a neat and workmanlike manner. Cables installed exposed on the ~~outer~~ surface of ceiling and sidewalls shall be supported by ~~the structural components of~~ the building structure in such a manner that the cable ~~is~~ will not be damaged by normal building use.

Mechanical Execution of Work 800.6 (continued)

Such cables shall be secured ~~attached to structural components~~ by straps, staples, hangers, or similar fittings designed and installed so as not to damage the cable. The installation shall also conform with 300.4(D) and 300.11.

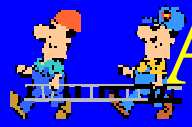
(See 300.11 Securing and Supporting)

Mechanical Execution of Work 800.6 (continued)

FPN: Accepted industry practices are described in ANSI/NECA/BICSI 568-2001, *Standard for Installing Commercial Building Telecommunications Cabling* and other ANSI-approved installation standards.

Mechanical Execution of Work 800.6 (continued)

- Removed requirement that cable must be supported by a structural component
- Clarified that the section applies to ceilings regardless of which side of the ceiling is supporting the cable
- Applies the requirements of 300.11 to Chapter 8



Access to Electrical Equipment Behind Panel

A series of proposals to permit cables to be installed directly on top of ceiling tiles was rejected.

CMP 16 Meeting Agenda (25 Groups of Proposals)

9. ITC cable (4 proposals)
10. Mechanical Execution of Work & Access to Equipment Behind Panels (11 proposals)
11. Grounding (15 proposals)

Grounding

- FPN added to 800.40, 820.40 and 830.40, subsection (A)(4) that requires a 20 ft. max grounding conductor in one- and two-family dwellings
  - FPN: Similar grounding conductor length limitations applied at apartment buildings and commercial buildings will help to reduce voltages that may be developed between the building's power and communications systems during lightning events.

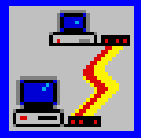
Grounding (continued)

- Proposal to revise “cable and primary grounding conductor” to “grounding electrode conductor” rejected.
  - “Grounding electrode conductor” has specific function as defined in Article 100
- Proposal to eliminate certain intersystem bonding means rejected.
  - Power service external means
  - Metallic power service raceway
  - Service equipment enclosure

CMP 16 Meeting Agenda (25 Groups of Proposals)

9. ITC cable (4 proposals)
10. Mechanical Execution of Work & Access to Equipment Behind Panels (11 proposals)
11. Grounding (15 proposals)
12. Article 800 Scope (1 proposal)

Groups 13 to 25. (19 proposals)



Moving Data Wiring to Article 800

- CMP-16 recommended that the TCC accept a proposed concept to move data wiring to Article 800 from Article 725 and approve the necessary scope changes.
- The TCC rejected the scope change.

Relocating Article 770 to Chapter 8 as Article 870

- A proposal to relocate Article 770 in Chapter 8 was accepted as optical fiber installations are primarily for communications.
- The TCC rejected the scope change.

Actions on Universal Proposals

- Rejected the proposal on “equipment grounding conductor”
- Accepted references to NFPA 5000-2002
- Rejected the “may/can” proposal as the terms are used correctly in the CMP-16 articles

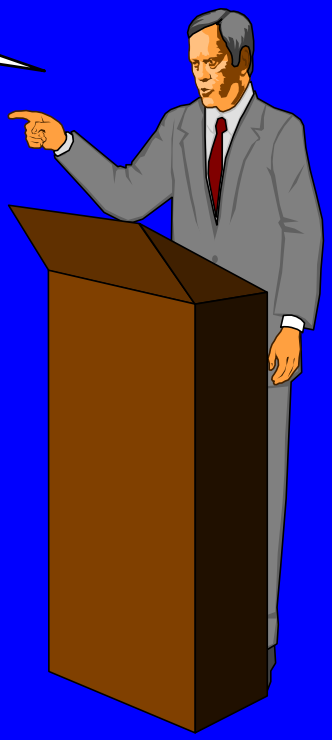
Referrals to the Air Conditioning Committee

Panel 16 identified all the proposals it received that are within the scope of the Technical Committee on Air Conditioning and recommended that the NEC Technical Correlation Committee refer those proposals to Technical Committee on Air Conditioning for comment.

NFPA Scope Coordination Policy

- Panel 16 actions on proposals relating to NFPA 90A are consistent with the "Scope Coordination Policy for NFPA Documents" issued by the Standards Council on April 3, 2003.
- TCC forming a joint NEC/90A task group to write comments to correlate panel 3 and 16 actions with NFPA 90A.

ANY QUESTIONS ?



May 20 & 21, 2003

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CMP-17

Chair-Don Jhonson

Articles 422, 424, 426, 427, 680

Acted on 168 Proposals

Developed 13 Panel Proposals

May 20 & 21, 2003

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Proposal #:17-6 NEC Section: 422.16(B)(4)

422.16(B)(4) Cord and Plug Connected Vending Machines. Cord-and-plug connected vending machines shall be one of the following:

(1) For new and remanufactured machines ground-fault circuit-interrupter protection for personnel shall be factory-installed, and shall be an integral part of the attachment plug or be located in the power supply cord within 300 mm (12 in.) of the attachment plug.

(2) Listed vending machines identified as incorporating a system of double insulation.

(3) Vending machines shall be connected to a circuit protected by a ground-fault circuit-interrupter.

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Proposal #:17-6(con't) NEC Section: 422.16(B)(4)

The U.S. Consumer Product Safety Commission (CPSC) has investigated four electrocutions in four separate incidents (CPSC Investigation Nos. 881202CCC1072, 950823CCN2720, 970922CCC2427 & 980402CCC3732), three of which occurred since 1995. Two of the deaths were to children, ages 9 & 10, when they contacted the vending machine. CPSC also investigated three additional incidents with vending machines, cases that involved nonfatal, electric shocks (CPSC Investigation Nos. 940816CEP9009, 950907CWE7273, & 960605CEP9016). In all incidents a vending machine conductor intended to carry current apparently faulted to the exposed frame of the machine, and the ground-fault path was damaged or inadequate.

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Proposal #: 17-13 NEC Section:422.12 Exception No. 2

A receptacle outlet and a light provided for maintenance of the equipment shall be permitted to be connected to the same branch circuit provided it is on the line side of the required disconnect for the equipment.

FPN: See 210.8 for GFCI requirements.

- When installing a new boiler in an old house or building, you would like to provide a light an an outlet for the service technician who will have to maintain the system.
- In some cases the "tech" must resort to putting an outlet adapter in the light half way across the basement and running an ungrounded drop light to work with. This change would make it more convenient to provide proper lighting and power for maintenance.

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Proposal #: 17-21 NEC Section: 422.16(B)(6)

422.16(B)(6) Range Hoods. Range hoods shall be permitted to be cord-and-plug connected with a flexible cord identified as suitable for the use on range hoods in the installation instructions of the appliance manufacturer, where all of the following conditions are met.

(1) The flexible cord shall be terminated with a grounding type attachment plug.

Exception: A listed range hood distinctly marked to identify it as protected by a system of double insulation, or its equivalent, shall not

be required to be terminated with a grounding-type attachment plug.

(2) The length of the cord shall not be less than 450 mm (18 in.) and not over 900 mm (36 in.).

(3) Receptacles shall be located to avoid physical damage to the flexible cord.

(4) The receptacle shall be accessible.

(5) The receptacle shall be supplied by an individual branch circuit.

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Proposal #: 17-21 (con't) NEC Section:422.16(B)(6)

Panel Statement:

The permission to use cord-and-plug connection provides the ability to upgrade to a combined microwave range hood. The panel added the additional requirements to ensure a safe installation of a combined microwave range hood.

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Proposal #: 17-24 NEC Section:422.31(B)

For permanently connected appliances rated over 300 volt-amperes or 1/8 hp, the branch-circuit switch or circuit breaker shall be permitted to serve as the disconnecting means where the switch or circuit breaker is within sight from the appliance or is 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.

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Proposal #: 17-24 (con't) NEC Section:422.31(B)

The problem with the present wording of this section is that the disconnect in many appliance applications is a circuit breaker in a panelboard or a switch that is not made with permanent provisions for locking the circuit breaker or switch in the open position. This clearly does not meet the requirements of 422-31(B). This section states "capable of being locked in the open position." With lock in hand an installer/maintainer can apply it and work safely. This language does not include "through the use of a device which will permit a lock to be utilized." However, the onset of circuit breaker & toggle switch locking devices have given the impression that any circuit breaker or switch is capable of being locked in the open position. Existing circuit breaker/toggle switch lockout devices are not permitted by OSHA.

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Proposal #: 17-30 NEC Section:424.3(B)

Fixed electric space heating equipment shall be considered continuous load.

Proposals 17-42 and 17-47 have been accepted and make the same revision to 426.4 & 427.4

This section implies the equipment is continuous load but is not explicit; if that is the intent it should be stated to clarify that continuous load requirements for the equipment also apply to (1) the feeders and service conductors; (2) the overcurrent devices and assemblies covered by 230.42(A)(2) and Exceptions for 210.19(A) and 215.3. Section 210.4(B) is not amended by this article and already applies.

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Proposal #: 17-36 NEC Section:424.22(B)

Exception: Listed instantaneous electric water heaters shall have their loads subdivided as defined in Article 422.

Proposal 17-63 has been accepted and makes the same revision to 680.9.

Due to the technological advances in tankless (instantaneous) water heater design, I believe that 424.22(B) should not apply as presently written to instantaneous electric water-heaters used for space heating applications as long as the heaters are protected within their rating. If an instantaneous water heater is a listed (UL) product that has been field tested with a variety of supply circuits, there is no technical or safety reason to limit the branch circuit protection to 60 amperes or cause the loads to be subdivided to 48 amperes. This requirement for water heaters was introduced in the 1975 code with the justification that heaters with "small internal conductors" might be protected by unspecified sizes of overcurrent devices.

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Proposal #: 17-53 NEC Section:427.27

In industrial establishments, the isolation transformer connected to the pipeline or vessel being heated shall not have an output voltage greater than 132 volts ac to ground where all of the following apply:

(1) Conditions of maintenance and supervision ensure that only qualified persons service the installed systems.

(2) Ground fault protection is provided.

(3) The pipeline or vessel being heated is completely enclosed in a grounded metal enclosure.

(4) The transformer secondary connections to the pipeline or vessel being heated are completely enclosed in a grounded metal mesh or metal enclosure.

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Proposal #: 17-53 (con't) NEC Section:427.27

Industry is finding that impedance heating is a very efficient heat exchanger for heating fluids to a high temperature. The only temperature limitation is the withstand temperature of the piping material used as the heater. These heat exchangers are fully enclosed in metal vessels, with the only exposure the inlet end outlet connections, which are kept at ground potential.

If the code is modified in accordance with the proposal, installations like this will require fewer transformers, reducing capital costs and making electrical heating more competitive when evaluated against other kinds of heating. In addition standard transformer configurations, the 132 voltage to ground limitation will include a 120/208V three phase transformer set at its +10 percent tap, can be used, further reducing cost and construction time. These installations are at least as safe as motor installations in industrial plants, where voltages can range up to 13.8 kV.

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Proposal #: 17-61 NEC Section: 680.8

680.8 Overhead Conductor Clearances. The minimum clearances required by this section shall be taken from the maximum water level of the specified body of water.

A new definition was added to the 2002 NEC to provide clarification for the height requirements for the deck boxes as covered in 680.24. This revision would clarify the requirement for 680.8 which requires a minimum clearance from the water level. The change is directed toward providing consistency in this section.

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Proposal #: 17-64 NEC Section: 680.10

680.10 Underground Wiring Location. Underground wiring shall not be permitted under the pool or within the area extending 1.5 m (5ft) horizontally from the inside wall of the pool unless this wiring is necessary to supply pool equipment permitted by this article. Where space limitations prevent wiring from being routed a distance of 1.5 M (5 ft) or more from the pool, such wiring shall be permitted where installed in rigid metal conduit, intermediate metal conduit, jacketed type MC cable that is listed for direct burial, or a nonmetallic raceway system. All metal conduit shall be corrosion resistant and suitable for the location. The minimum burial depth shall be given in Table 680.10

Jacketed Type MC cable that is listed for direct burial is suitable for underground installations including those within 5 ft of a swimming pool. The burial depth that is proposed is taken from Table 300.5 as are the wiring methods and burial depths presently covered in Table 680.10. Jacketed Type MC cable that is listed for direct burial has both an outer jacket and a metallic armor that provides suitable mechanical protection for the cable in the proposed application.

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Proposal #: 17-71 NEC Section: 680.12

A means to disconnect all ungrounded conductors shall be provided for all utilization equipment other than lighting. The disconnecting means shall be readily accessible and within sight from its equipment.

There does not seem to be a reason to have the section refer to more than one disconnecting means. One disconnecting means within sight should provide the safety needed. Also, the disconnecting means should be "readily accessible," as defined in Article 100 not just "accessible." An "accessible“ disconnecting means could be located at a height where a portable ladder or other means would be needed to access the disconnect for the equipment. This does not seem safe or needed from an operational standpoint.

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Proposal #: 17-90 NEC Section: 680.23(B)(2)

Nonmetallic Conduit. Where a nonmetallic conduit is used, an 8 AWG insulated solid or stranded copper bonding jumper ~~equipment grounding conductor~~ shall be installed in this conduit unless a listed low-voltage lighting system not requiring grounding is used. The bonding jumper ~~equipment grounding conductor~~ shall be terminated in the forming shell, junction box or transformer enclosure, or ground-fault circuit-interrupter enclosure. The termination of the 8 AWG bonding jumper ~~equipment grounding conductor~~ in the forming shell shall be covered with, or encapsulated in, a listed potting compound to protect the connection from the possible deteriorating effect of pool water.

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Proposal #: 17-90 (con't) NEC Section: 680.23(B)(2)

The revision as proposed would provide consistency with the use of grounding and bonding terms that parallel those defined terms in other sections of the NEC and Article 100. In these installations there are there components of the grounding and bonding scheme that all provide different roles. It appears that the appropriate term for the conductor in the raceway between the forming shell and the deck box would be "bonding jumper" and would be consistent with that defined term in Article 100.

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Proposal #: 17-98 NEC Section: 680.23(B)(6)

(6) Servicing. All luminaires shall be removable from the water for relamping or normal maintenance. Luminaires shall not be installed in such a manner that the water level must be reduced or the pool drained for relamping, maintenance, or inspection.

All too often swimming pools are being installed in such a manner that the adjacent structural foundation is part of the pool wall, especially high end residences. Luminaires are being installed in these combination foundation and pool walls in such a way as they will not allow the relamping of the luminaire unless a person is in the pool, or the water is reduced, and even then people may still be standing in the water for relamping. This is a real potential shock hazard, especially if the luminaire is accidentally energized by someone inside the residence who does not realize that there may be someone working on the pool lighting.

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Proposal #: 17-115 NEC Section: 680.26

680.26 Equipotential Bonding.

(A) Performance. The equipotential bonding required by this section shall be installed to eliminate voltage gradients in the pool area as prescribed.

Changes are being proposed to this section in an attempt to clarify the purpose of the bonding required by this section. It seems clear from 680.26(A) that the bonding is done here "to eliminate voltage gradients in the pool area as prescribed." This equipotential bonding differs from the bonding defined in Article 100 as "Bonding (Bonded). The permanent joining of metallic parts to form an electrically conductive path that ensures electrical continuity and the capacity to conduct safely any current likely to be imposed." In spite of the improvements to Article 680 made by CMP-20 in processing the 2002 NEC, this section can be improved to clarify the purpose of bonding.

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Proposal #: 17-120 NEC Section: 680.26(B)(6)

(6) Pool Water. The pool water shall be effectively bonded. Pool shells made of reinforced concrete in which the water is in direct contact with the concrete and the reinforcing steel is utilized as the common bonding grid shall be considered to effectively bond the water. If non-conducting or non-reinforced material is used to form the pool shell or liner, bonding shall be accomplished via the use of metallic parts, plumbing, lighting brackets and shells, ladders, electrodes, etc., in continuous contact with the water. The metal shall be copper, brass, bronze, or other corrosion resistant material or may be chrome plated. Metallic parts used for bonding shall have a minimum surface area in contact with the water of 200 square centimeters. Semi-conducting material may be used if the resistivity of such material is less than 0.1 ohm-centimeters. Semi-conducting material shall have a minimum of 0.5 square meters in contact with the pool water at each location and encapsulate copper conductor evenly distributed throughout. The encapsulated copper conductor shall have a total electrical area of at least 16,500 circular mils and have terminations of at least 8 AWG. Point of bonding with the pool water shall be made at no more than 4 meters distance around the circumference of the pool.

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Proposal #: 17-120 NEC Section: 680.26(B)(6)

The past three revisions of the National Electrical Code® (NEC) Article 680.26 (2002 edition or equivalent) have neglected to include the swimming pool water itself in the parts of the pool structure that should be bonded together. This is significant because an electric potential (voltage) may exist between the grounded conductors of an electric system and local "earth" ground. This potential is most frequently referred to as "stray voltage" but may synonymously be called ground potential rise (GPR) and neutral-to-earth (NTE) voltage.

Non-conductive materials used in the construction of contemporary pools generally prevent the pool water from coming into electrical contact with the grounding conductors of the electric system (through such obvious means as bonded metallic plumbing or steel reinforced concrete sides). Pool water becomes "bonded" to the local "earth" potential by water seepage through the vinyl liner.

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Proposal #: 17-124 NEC Section: 680.27

680.27 Alternate Voltage Gradient Suppression System. If nonconductive reinforcing is utilized with an electrically conductive containment media, an alternative voltage gradient suppression system shall be installed. This system may be constructed as specified in 680.27(1) through 680.27(6).

(1) Material and Connections.

(2) Containment Structure Rings.

(3) Deck Rings.

(4) Ring Spacing Tolerance.

(5) Ring-Bond Conductors.

(6) Securing.

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Proposal #: 17-124 NEC Section: 680.27

At the adoption of the 2002 code, Panel 20 recognized that the loss of reinforcing steel as an electrical current protection for persons in and around a pool due to encapsulation with a nonconductive compound needed to be compensated for. The last sentence of 680.26(B)(1) was added to address this issue. The proposed 680.27 is intended to give at least one method which will satisfy the need for alternative protection.

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Proposal #: 17-154 New Article 682

Article 682 Natural and Artificially Made Bodies of Water

I. General

682.1 Scope. This article applies to the installation of electrical wiring for and equipment in and adjacent to natural or artificially made bodies of water not covered by other articles of this *Code*.

682.2 Definitions.

Natural Bodies of Water. Bodies of water such as lakes, streams, ponds, rivers or other naturally occurring bodies of water, and which may vary in depth throughout the year.

Artificially Made Bodies of Water. Bodies of water that have been constructed or modified to fit some decorative or commercial purpose such as, but not limited to, Aeration Ponds, Fish Farm Ponds, Storm Retention Basins, Sewage Treatment Ponds, Irrigation (Channels) Facilities.

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Proposal #: 17-154 (con't) New Article 682

Other parts of new article are:

II. Installation

III. Grounding and Bonding

This proposal is the result of the NEC CMP-17 Task Group on Other Bodies of Water. This Task Group is from an action of the 2002 NEC CMP-20's direction to investigate the need of a new article to cover the types of installations that include bodies of water involving electrical equipment not covered by Article 680 in the NEC. The direction is referenced in NEC May 2001 ROC Comments 20-12 and 13 and NEC May 2001 ROP Proposals 20-32 and 34. Further, this change also refers to 1996 NEC CMP-20's Panel Statement in their rejection of NFPA 70 A95 ROP Proposal 20-53 for 1993 NEC Section 680-4 to include ponds indicated in part: "Storm retention basins, sewage treatment ponds, and similar bodies of water are not covered under the scope of Article 680.

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Articles Responsible for:

406 – Receptacles, Cord Connectors, & Attachment Plugs

410 – Luminaries, Lampholders & Lamps

411 – Lighting Systems Operating at 30 Volts or less

600 – Electric Signs & Outline Lighting

605 – Office Furnishings (Consisting of Lighting Accessories & Wired Partitions)

May 20 & 21, 2003

Code Making Panel 18

May 20 & 21, 2003

Panel Members

Jeffrey S. Sargent, NFPA Staff Liaison

- Michael N. Ber, IEC, Chair
- Paul Costello, IBEW
- Kenneth A. Fetzer, UL
- Stephen G. Kieffer, ISA
- Steven A. Larson, IEEE
- Michael S. O'Boyle, ALS
- Timothy S. Owens, IEAI
- Carl T. Wall, EEI
- Jack Wells
- Fred Carpenter, NEMA
- Amos D. Lowrance, IAEI
- Ronald Michaelis, IBEW
- Chis P. O'Neil, EEI
- Rachna Stegall, UL
- Charles M. Trout, NECA
- Alan M. Smith, ISA
- Saul Rosenbaum, NEMA
- Michael W. Smith, NECA

Report On Proposals CMP-18

Hilton Head, South Carolina

January 16th thru 18th 2003

122 Proposals

11 Panel Proposals

May 20 & 21, 2003

Report On Proposals CMP-18
Tally of Votes

Reject (R) - 80

Accept (A) - 16

Accept In Part (APA) - 3

Accept In Principle (APR) - 26

Accept In Principle In Part (APP) - 8

May 20 & 21, 2003

18-1 (Entire Document)

- Would change “equipment grounding conductor” to “equipment bonding conductor.”
- “…does not provide technical data or documentation to indicate that the use of the present term has led to unsafe installations.”
- 14 companion proposals to change the terminology in specific locations.
- Has far reaching ramifications beyond the scope of CMP-18.
- Reject

18-10 & 18-7 (406.2)

- This proposal would have required a new receptacle product with built in thermal protection
- "…the number of incidents involving receptacle failure is extremely low and does not support a change of this magnitude."
- Reject

18-33 [406.8(B)]

- Would require weatherproof covers on all receptacles in wet locations.
- Panel does not agree that all covers need to be weatherproof whether a cord is connected or not.
- Also see 18-35
- Reject

18-41 [406.8(C)]

- New wording, “Receptacles shall not be installed within or directly over the bathtub or shower stall.”
- Accept in Principle

18-50 (410.1)

- CMP-18 recommends to the TCC that a FPN be added to the scope of Article 410 to state: “As defined in Article 100, the definition of luminaire includes decorative lighting products and accessories for temporary seasonal and holiday use, and portable flexible lighting products.”
- Accept in Principle

18-57 [410.4(E) New]

- Some reported incidences of over exposure to UV radiation.
- “Luminaires subject to physical damage … shall be of the type that protects the lamp with a glass, or UV attenuating plastic lens.”
- Accept in Principle

18-61 [410.15(B)]

- Change would allow the use of metal or nonmetallic poles for the support of luminaires, such as parking lot fixtures.
- Accept

18-69 [410.18(B) Ex.No.2 New]

- Also see 18-70, 18-72, & 18-74
- Exception to read; “Replacement luminaires that are GFCI protected shall not be required to be connected to an EGC.”
- Accept in Principle

18-91 [410.73(F)(5) New]

- Fires have resulted from from the spillage of hot arc tube particles in the event of lamp explosion or failure.
- “Luminaires that use a metal halide lamp, other than a PAR, shall be provided with a containment barrier that encloses the lamp…”
- Even more far reaching is that this change will require that lamps be listed.
- Accept in Principle

18-92 (410.79)

- Because of concerns for maintenance personnel this proposal will require a disconnect switch for luminaires with ballasts.
- Accept in Principle in Part
- Refer to 18-93

18-93 [410.73(G) New]

- New requirement for a disconnecting means for luminaires containing ballasts.
- Accept in Principal
- Rejected in Ballot
- Will require TCC Input
- Refer to 18-92

18-98 [411.4]

- Removes the requirement that Low Voltage lighting system wiring comply with Chapter 3 wiring methods.
- “Installations performed with wiring supplied by a listed Class 2 power source and installed in accordance with 725.52.”
- Accept in Principle

18-106 (600)

- Revise the FPN in 600.1 to read “Neon art forms are considered to be covered by these requirements.”
- Accept in Principle
- Referred to the TCC

18-107 (600)

- Several alterations to Article 600 including:
  - New definition of Section Sign
  - Signs to comply with hazardous location requirements
  - Installation instructions to be provided
  - Field installed secondary wiring to comply with 600.32
- Accept in Principle

18-110 (600.24 New)

- To read: “Class 2 Power Sources. In addition … signs and outline lighting systems supplied by Class 2 transformers, power supplies, and power sources shall comply with Article 725.”
- Accept in Principle

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547.2 Definitions Proposal 19-7a Log # CP1908

- Summary of the Change: A definition for "site-isolating device" has been created and added to 547.2.
- Type of Change: Revision and Relocation
- Code Language: Site-Isolating Device. A disconnecting means installed at the distribution point for the purposes of isolation, system maintenance, emergency disconnection, or connection of optional standby systems.
- Analysis of the Change: The term "site-isolating device" is unique to Article 547 but was never clearly defined. 547.9(A)(1) in the 2002 NEC described the purpose of this device and was, in effect, a definition. This change now creates a definition and places it in 547.2 to conform with the NEC Style Manual.

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547.5(A) Proposal 19-8 Log # 3085

- Summary of the Change: Open Wiring on Insulators as described in Article 398 has been deleted as an acceptable wiring method for the areas delineated in 547.1(A).
- Type of Change: Deleted Text
- Analysis of the Change: This change recognizes that while Open Wiring on Insulators may be an acceptable wiring method for certain areas of agricultural establishments, it is not acceptable within those buildings or confinement systems described in 547.1(A). The requirements for equipment enclosures, boxes, conduit bodies, and fittings contained in 547.5(C) and the requirements for luminaires in 547.8(A) have presented practical difficulty for compliance where Article 398 wiring methods have been employed.

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547.5(G) Ground-fault Protection Proposal 19-10a Log #CP1901

- Summary of the Change: The requirements for ground-fault protection previously found in 547.10(B) have been revised and relocated into 547.5(G). The title of the section has been changed from "Receptacles" to "Ground-Fault Protection".
- Analysis of the Change: The relocation of all requirements for ground-fault protection into one section was done to enhance usability. The addition of (G)(2) requires that circuits other than those covered in (G)(1) be provided with ground-fault protection of equipment rather than GFCI protection in those dirt confinement areas where an equipotential plane is not required. It was concluded that some types of equipment may not be compatible with GFCI protection.

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547.5(G) Ground-fault Protection Proposal 19-10a Log #CP1901

•Code Language: 547.5(G) Ground-Fault Protection. Ground-fault protection shall be provided in accordance with 1 and 2 below:

•1. General Purpose Receptacles. All 125-volt, single-phase, 15- and 20-ampere general purpose receptacles installed in the following locations shall have ground-fault circuit-interrupter protection for personnel:

•(a) Areas having an equipotential plane

•(b) Outdoors

•(c) Damp or wet locations

•(d) Dirt confinement areas as covered in 547.10(B)

•(2) Other Circuits. Other circuits providing electric power to metallic equipment that may become energized and is accessible to livestock in dirt confinement areas as covered in 547.10(B) shall have ground-fault protection of equipment.

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547.9 Electric Supply to Building(s) or Structure(s) from a Distribution Point Proposal 19-12a Log # CP1907

•Type of Change: Revision

•Summary of the Change: This section has been rewritten to conform to the NEC Style Manual and also incorporates in principle or in part, technical issues raised in Proposals 19-14, 19-16, 19-17, 19-18, 19-19, 19-21, and 19-23. The overall proposal will clarify the requirements for farm premises distribution.

•Code Language: See complete text in the NEC

•Analysis of the Change: One of the key revisions to this section is that a site-isolating device, as now defined in 547.2, is required to be pole-mounted. Where such a device is readily accessible at grade level it must meet all the provisions for service equipment, including overcurrent protection and short-circuit current ratings.

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550.13(F)(1) Receptacle Outlets Proposal 19-46a Log #CP1919 not Permitted

- Type of Change: Revision
- Summary of the Change: The revised text brings the requirements for receptacle location into conformity with 406.8(C).
- Code Language: (1) Receptacle outlets shall not be installed with a bathtub or shower space.
- Analysis of the Change: The former language "within reach" even as qualified by the 750mm (30 in.) dimension was subjective. Prohibiting a receptacle within 750 mm (30 in.) could be perceived as overly restrictive for manufactured housing as this restriction is not applied to conventional housing.

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Article 551 Part II Low-Voltage Systems 551.10(A) through (H) Proposal 19-46a Log #CP1919

- Type of Change: Deleted Text
- Summary of the Change: The specific requirements for low-voltage systems in Recreational Vehicles has been deleted
- Code Language: Part II Low-Voltage Systems comprising 551.10(A) through (H) is deleted.
- Analysis of the Change: The primary standard for the construction of Recreational Vehicles is NFPA 1192, Standard on Recreational Vehicles. The 2002 edition of this standard at 4.4 states that low-voltage installations, systems, and equipment shall comply with ANSI/RVIA 12V, Low-Voltage Systems in Conversion and Recreational Vehicles, and no longer references Part II of Article 551. As such, the requirements in Article 551 Part II can be deleted without jeopardizing safety.

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555.71 Type Receptacles Provided Proposal 19-101a Log #CP1909

•Type of Change: Revision

•Summary of the Change: The percentage of Recreational Vehicle sites to be provided with a 50-ampere, 125/250-volt receptacle is changed from 5 percent to 20 percent. A Fine Print Note is also added to the section to provide guidance to park owners and designers.

•Analysis of the Change: The number of recreational vehicles with 50-ampere electric systems has increased over the years. Survey information indicates that some campground chains are providing 18 percent of their sites with 50-ampere supplies to serve these numbers of recreational vehicles. In order that recreational vehicle owners may be accommodated without resorting to adapters, the minimum number of sites to be supplied with 50-ampere facilities is being increased. The Fine Print Note is added to explain that based on the usage of the park, providing 50-ampere receptacles at even 20 percent of the sites may not be adequate.

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555.71 Type Receptacles Provided Proposal 19-101a Log #CP1909

- Code Language: 551.71 second sentence – A minimum of 20 percent of all recreational vehicle sites… (remainder unchanged).
- FPN: The percentage of 50 ampere sites required by 551.71 may be inadequate for seasonal recreational vehicle sites serving a higher percentage of recreational vehicles with 50 ampere electrical systems. In that type of recreational vehicle park the percentage of 50 ampere sites could approach 100 percent.

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553.4 Location of Service Equipment Proposal 19-131 Log # 1352

- Type of Change: Revision
- Summary of the Change: The revised language correlates with similar requirements for the location of service equipment in marinas and boatyards.
- Code Language: 553.4 Location of service Equipment. The service equipment for a floating building shall be located adjacent to, but not in or on, the building or any floating structure.
- Analysis of the Change: The existing language of this section prohibited the service equipment from being located in or on the floating building. The submitter's substantiation correctly pointed out that this language did not actually prohibit the service equipment from being located on an adjacent floating pier, wharf, or dock. In that respect, there is no difference between the service equipment for a floating building or a floating pier, wharf, or dock in a marina or boatyard. The revised language now makes the requirements for both occupancies identical.

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553.8 General Requirements Proposal 19-132 Log # 693

- Type of Change: Revision
- Summary of the Change: The revised text correlates with the requirements of 555.15(B) in regards to re-identification of equipment grounding conductors and for compliance with the NEC Style Manual.
- Analysis of the Change: The permission to reidentify insulated conductors larger than 6 AWG or in multiconductor cables for use as equipment grounding conductors in marine locations has been allowed in Article 555. Since floating buildings are located in virtually identical environments as marinas and boatyards, the same permission has been extended to Article 553. The specific sections referenced from 250.119 do not allow for stripping the insulation as a means of re-identification.

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553.8 General Requirements Proposal 19-132 Log # 693

•Code Language: 553.8 General Requirements. Grounding at floating buildings shall comply with 553.8(A) through (D).

•(A) Grounding of Electrical and Nonelectrical Parts. Grounding of both electrical and nonelectrical parts in a floating building shall be through connection to a grounding bus in the building panelboard.

•(B) Installation and Connection of Equipment Grounding Conductor. The equipment grounding conductor shall be installed with the feeder conductors and connected to a grounding terminal in the service equipment.

•(C) Identification of Equipment Grounding Conductor. The equipment grounding conductor shall be an insulated copper conductor with a continuous outer finish that is either green or green with one or more yellow stripes. For conductors larger than 6 AWG, or where multiconductor cables are used, re-identification of conductors as allowed in 250.119(A)(2) and (A)(3) or 250.119(B)(2) and (B)(3) shall be permitted.

•(D) Grounding Electrode Conductor Connection. The grounding terminal in the service equipment shall be grounded by connection through an insulated grounding electrode conductor to a grounding electrode on shore.

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555.21 Motor Fuel Dispensing Stations – Hazardous (Classified) Locations

Proposal 19-142

Log # 1056

- Type of Change: Revision
- Summary of the Change: The term "gasoline" is changed to "motor fuel" in the title and first sentence. A new second sentence is added and the Fine Print Note which appeared in the 1999 edition is reinstated.
- Analysis of the Change: The term "gasoline" was changed to "motor fuel" to reflect changes in terminology used in Article 514 and NFPA 30A. The new requirement added as the second sentence, was brought into the NEC from NFPA 30A. Since this is an installation requirement for the basic electrical system, it is appropriate to include it in the Code rather than apply a referenced standard. Installing the electrical wiring on the opposite side of the pier will afford some degree of separation from the fuel piping and will lessen the possibility of damage to either system during maintenance work or by wave action and normal movement typically encountered, such as on floating pier sections. The Fine Print Note was included to provide guidance to the users of the Code.

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555.21 Motor Fuel Dispensing Stations – Hazardous (Classified) Locations Proposal 19-142 Log # 1056

•Code Language: 555.21 Motor Fuel Dispensing Stations – Hazardous (Classified) Locations. Electrical wiring and equipment located at or serving motor fuel dispensing stations shall comply with Article 514 in addition to the requirements of this section. All electrical wiring for power and lighting shall be installed on the side of the wharf, pier, or dock opposite from the liquid piping system.

• FPN: See NFPA 303-2000, Fire Protection Standard for Marinas and Boatyards, and NFPA 30A-2000, Motor Fuel Dispensing Facilities and Repair Garages, for additional information.

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604.6(A)(3) and (F) Construction Proposal 19-154 Log # 2323

- Type of Change: Revision and New Text
- Summary of the Change: The phrase "other than luminaires (fixtures)" has been added to (A)(3) and a new section (F) is added to cover luminaires (fixtures) supplied by flexible cords.
- Analysis of the Change: The revised language in (A)(3) clarifies that the provisions of this section limiting the length and size of flexible cords utilized in manufactured wiring systems are not applicable to luminaires (fixtures). The new section (F) permits listed electric-discharge luminaires (fixtures) to be installed with manufactured wiring system components where the installation complies with 410.30(C). This section has permitted cord-connected electric-discharge luminaires since 1981. Electric-discharge luminaires (fixtures) utilizing flexible cord and manufactured wiring system connectors have been listed and installed for many years. Manufactured wiring systems are evaluated to UL 183 and the connectors are also tested to UL 498, the same standard by which the attachment plugs referenced in 410.30 are tested.

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604.6(A)(3) and (F) Construction Proposal 19-154 Log # 2323

•Code Language: 604.6(A)(3) Flexible Cord. Flexible cord suitable for hard usage, with minimum 12 AWG conductors, shall be permitted as part of a listed factory-made assembly not exceeding 1.8 m (6 ft) in length when making a transition between components of a manufactured wiring system and utilization equipment, other than luminaires (fixtures), not permanently secured to the building structure. The cord shall be visible for its entire length and shall not be subject to strain or physical damage.

•604.6(F) Luminaires (Fixtures). Installation of listed electric-discharge luminaires (fixtures) complying with 410.30(C) shall be permitted.

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604.6(E) Securing and Supporting Proposal 19-155a Log #CP1918

- Type of Change: Revision
- Summary of the Change: The title and text of the section has been changed to include securing.
- Code Language: 604.6(E) Securing and Supporting. Manufactured wiring systems shall be secured and supported in accordance with the applicable cable or conduit article for the cable or conduit type employed.
- Analysis of the Change: The common numbering changes to the Chapter 3 wiring method articles in the 2002 Code cycle resulted in the applicable sections being designated as xxx.30 titled securing and supporting. In several articles, securing and supporting are dealt with in separate subdivisions. This change will require that manufactured wiring systems be both secured and supported where the specific wiring method article requires such instead of merely being supported.