SCC18 March 12-13, 2018 Meeting Agenda

Logistics

Attendance: All SCC18 members are expected to attend and participate. Guests who are not SCC18 members are welcome to attend with advance notice* to the SCC18 Chair. Guests may not participate without advance permission* from the SCC18 Chair. *Deadline is March 2.

Location: NEMA 1300 North 17th Street | Suite 900 Rosslyn, VA 22209

Times: Monday 8:00am – 5:00pm, Tuesday 8:00am – 4:30pm

Upon arrival: Check in at the lobby reception for a map/escort to the conference room

Meals: Breaks and lunch will be at cost or sponsored or both days; dinner will be on your own

Agenda

Time	What	Who
	Monday March 12	
7:30	Check in and setup	
8:00	Welcome Logistics (emergency exits, restrooms, lunch, etc.)	Chris Hunter NEMA Office Mgr. Mark Haga
8:05	Introduction of participants, record of attendance, determination of a quorum	Paul Myers
8:10	Approval of agenda Motion and second made with unanimous approval given to accept the Meeting Agenda "as-modified" Introductory remarks (IEEE boilerplate, etc.)	Chris Hunter Pat Roder
8:15	Conduct of meeting • The meeting will be conducted in a fashion similar to that of an NFPA technical committee meeting (request permission to speak, motions to oppose a panel first revision must be accompanied by a statement, etc.) • Roberts Rules will be followed • A motion to oppose a first revision may be for one or more reasons: 1. Technical 2. Best engineering practice 3. Field experience • If the Chair must recuse herself, the Vice chair will temporarily chair the meeting	Chris Hunter

	2020 NEC First Draft Reports Each NEC ER will have a maximum of 45 minutes for his report to be considered and ballot instructions agreed to	
8:25	***CMP-1, 2020 NEC First Draft Report*** ***Articles 90, 100, 110, Ch. 9, and Annexes A, H, I, J*** **(*Kent Sayler, Principal, - Alternate Frank Tyler*)**	

1) Noteworthy Panel Actions

a) ***Panel Statistics: 235 PIs; 33 FRs. 11 voting members; 5 final motions had < 9 supporting votes.***

b) ***First Revision No. 8600-NFPA 70-2020 [Section No. 110.22(A)]***

Requires all disconnecting means (excluding dwelling units) to be marked with the identification of the circuit source that supplies it

c) ***First Revision No. 8653-NFPA 70-2020 [Section No. 110.26(C)(2)]***

Enforces large equipment entrance/egress requirements for groups of service disconnects with combined ratings of 1200A or more

2) Statements Opposing First Revisions

a) ***First Revision No. 8370-NFPA 70-2020 [Section No. 90.2(A)(5)]***

IEEE statement opposing the First Revision: FR8370

The proposed language does not improve clarity or usability of the code. The emphasis on monitoring of leakage current is misplaced and belongs in Article 555.

b) ***First Revision No. 8211-NFPA 70-2020 [Section No. 90.2(B)]***

IEEE statement opposing the First Revision: FR8211

The proposed language would create confusion between what is and is not covered by the Code. The "…other than" language should remain, as it is necessary to clarify the specific types of watercraft and automotive vehicles that are covered.

c) ***First Revision No. 8757-NFPA 70-2020 [Section No. 90.3]***

IEEE statement opposing the First Revision: FR8757

"..To better serve the purpose of the Code…" is insufficient technical substantiation has been provided to justify the proposed revision to 90.3 and elimination of the long-standing and effective Code arrangement. The proposed revision will have significant impact on both the NEC and the communications industry as follows:

1. Presently, none of the requirements in Chapters 1 through 7 apply to Chapter 8 unless they are specifically referenced in Chapter 8. The proposed revision of 90.3 will require that all Chapter 8 articles be reviewed and revised to identify each requirement of Chapters 1 through 7 that does not apply.
2. Communications providers' installation and maintenance practices (best practices) are written based upon the present Code arrangement. The revision will require communications providers,

as well as other standards bodies, to review and potentially revise their documentation at great expense to accommodate this unnecessary proposed revision.

3. There are many technical requirements that must be addressed. Examples include:

   - In power circuits a conductor with green colored insulation identifies a grounding conductor; communications signal-carrying (ungrounded) conductors frequently use green colored insulation.

   - If the Chapter 3 wiring requirements were applied to communications installations all of them would fail because of the integrated grounding scheme used where the battery return is connected to the equipment frame. Thus, some return current goes back to the source via the equipment grounding conductors.

d) First Revision No. 8621-NFPA 70-2020 [Section No. 110.26(A)]

IEEE statement opposing the First Revision: FR8621

The proposed language is not appropriate for the Informational Note to which is appended, as the existing language is a reference to NFPA 70E and the proposed language discusses requirements of the Code.

3) Motion

Motion to support all First Revisions except the following with the above IEEE Statement opposing the first revision

a. FR 8370; Article 90.2(A)(5) Scope - Covered
b. FR 8211; Article 90.2(B) Scope - Not Covered
c. FR 8757; Article 90.3 Code Arrangement
d. FR 8621; Article 110.26(A) Spaces about Electrical Equipment - Working Space

4) SCC18 Direction to IEEE-ER *(Secretary will select during the meeting)*

SCC18 Directs the IEEE-ER to support all first revisions

SCC18 Directs the IEEE-ER to support all first revisions and include the statements provided above for (list PIs or the following PIs)

SCC18 Directs the IEEE-ER to support all first revisions with the exception of (list PIs or the following PIs) with the negative statements provided above

9:10

CMP-2, 2020 NEC First Draft Report

Articles 210, 219, 220, and Annex D, Examples D1 through D6

(Nehad El-Sherif, Principal, - Alternate Vacant)

1) Noteworthy Panel Actions

a) *GFCI protection in dwelling units is expanded to all 250 V receptacles installed in locations specified in 210.8(A), regardless of their current rating (FR-7705).*

Panel Statement: *The addition of 250 volt receptacles and removing amperage limitations will provide GFCI protection to most receptacles commonly used in the specified areas. These areas have been shown to require GFCI protection for receptacles. 250 volt receptacles present similar hazards.*

b) *GFCI protection in dwelling units is expanded to indoor damp and wet locations (FR-8121).*

Panel Statement: *Indoor damp and wet locations was were added as there are indoor locations such as mud rooms that would benefit from having GFCI protection, and there may be such areas in a dwelling where the other locations listed such as within 6 feet of a sink do not apply.*

c) ***The 150 V to ground limitation for using GFCI protection in other than dwelling units is changed from receptacles rating to the branch circuits rating (FR-7791).***

Panel Statement: *Receptacles are listed and identified as having nominal or maximum voltage ratings but do not have identified voltage-to-ground ratings demonstrable by the installer or the manufacturer to the AHJ. While correlation with the limits of Class A GFCI protection of personnel requires applications not exceed 150 volts to ground, it is the rating of the branch circuit rather than of the receptacle that shall not exceed 150 volts to ground. Item numbers were added to match language in 210.8(A) and to address new exception in 210.8(B).*

d) ***GFCI protection in other than dwelling units is expanded to commercial laundry areas (FR-8126) and shower stalls and bath tubs (FR-8127).***

Panel Statement: *Laundry areas have been added because the hazards in laundry areas in 210.8(B) are similar to 210.8(A) dwelling units.*

Panel Statement: *Shower stalls and bathtubs can exist in commercial and industrial locations outside of a locker room or bathroom for a variety of purposes such as decontamination, and safety applications. Devices within six feet of the outside edge of a shower stall or bathtub have similar hazards and now require GFCI protection.*

e) ***AFCI protection is expanded to to all 120 V, single-phase, 15 and 20 A branch circuits in a dwelling unit (FR-7916).***

Panel Statement: *CMP-2 continues the incremental steps to protect the entire dwelling. These remaining circuits now have the protection from arc faults as the rest of the dwelling.*

f) ***The reference to UL Subject 1699C, Outline of Investigation for System Combination Arc-Fault Circuit Interrupters in Information Note 1 is deleted (FR-8131).***

Panel Statement: *Informational Note No. 1: The referenced UL 1699C standard was never finalized or adopted and therefore has been removed from the informational note. Informational notes are present for the benefit of the user and having an informational note in this location is appropriate.*

g) ***Alignment of the NEC branch circuit, feeder, and service load calculations with the 2000 ASHRAE 90.1 standard. This FR is based on the work done by the Correlating Committee (CC) Energy Task Group (TG). The following FRs (companions to FR-8075) are based on other PIs submitted by the CC Energy TG:***

FR	*Proposed Change*

	FR-8104 *New Section 220.11 for "Floor Area Calculation"* *FR-8076* *The language of 220.14(J) is revised to correlate with the proposed changes in Table 220.12 and to enhance the clarity and intent of calculations in 220.14* *FR-8079* *Section 220.16 is revised to align with the proposed changes* *FR-8080* *Table 220.42 is revised to align with the proposed changes* **h) *Examples D1 through D6 are load calculations examples intended to help the NEC user to use the rules of Article 220. Therefore any change made in Article 220 should be reflected in those examples.*** ***Panel decision:*** *The panel decided to wait and not make any changes to Annex D Examples D1 through D6 until after balloting on the proposed FRs. If the FRs in Article 220 pass balloting, a TG will be formed to revise those examples accordingly.* **2) Motion** ***Motion to support all First Revisions*** **3) SCC18 Direction to IEEE-ER** *(Secretary will select during the meeting)* ***SCC18 Directs the IEEE-ER to support all first revisions*** ***SCC18 Directs the IEEE-ER to support all first revisions and include the statements provided above for (list PIs or the following PIs)*** ***SCC18 Directs the IEEE-ER to support all first revisions with the exception of (list PIs or the following PIs) with the negative statements provided above***
9:55	***CMP-03, 2020 NEC First Draft Report*** ***Articles 300, 590, 720, 725, 727, 728, 760, Chapter 9, Tables 11(A) and (B), and Tables 12 (A) and (B)*** **(*T. David Mills, Principal, - Alternate William Szeto*)** **1) Noteworthy Panel Actions** a. *FR 8790 (PI-1021) 725.2 Definitions - Defined "Nominal Current" as, "The designated current per conductor as specified by equipment design". (Action taken as a result of TIA 70-17-10.)* ***Affirmative Comment:*** *The more appropriate term should be ''Rated Current''.* *Typically, in electrical systems, we refer to Nominal Voltage generally as the reference where the voltage may vary over a range, such as in 120 VAC systems where the voltage may vary 5 to 10 volts either side. These systems generally refer to current as a maximum and conductors are rated to carry that maximum current per the applicable sections of the Code and that rating is ampacity.* *My understanding is that in today's telecommunications world the power draw is*

constant, which means that the current fluctuates inversely to the voltage (PoE 60 watt devices for example). Most telecommunications transmission equipment will stop operating when the system voltage drops below 44 Vdc, so if this type of discharge does occur, the current could exceed the conductor current rating (ampacity).

Now put yourself in the position of an AHJ inspecting these systems. How do they determine if an installation has been installed per the NEC? The only way is for them to refer to the manufacturer's name plate for the equipment which would provide a rated current value. This value is the maximum current at which the equipment will operate. Installation contractors have expressed concern for fear of liability issues because they can't guarantee their work based on an apparently arbitrary number ''as specified by equipment design''.

The term ''rated current'' is widely used and accepted in the industry.

I recommend that the Panel members really look at this during the interim between now and the Second Revision meeting to make sure they are fully cognizant of the potential ramifications of ''defining'' a term that cannot be quantified or inspected.

b. *FR 8859 (PI-1022, PI-3659, PI-58, PI-3664) 725.121(C) Marking – Among other modifications, this FR uses the term "nominal current".*

Affirmative Comment:
See affirmative comment for FR8790.

c. *FR 8863 (PI-71) 725.139(D)(1) Communications Cables – The revised wording makes it clear that the requirement is for conductors in a cable.*

d. *FR 8932 (PI-2144, PI-1921, PI-1024) 725.144(A) Use of Class 2 or Class 3 Cables to Transmit Power and Data – Used the term "nominal current".*

Affirmative Comment:
See affirmative comment for FR8790.

e. *FR 8934 (PI-697, PI-1922, PI-1025, PI-417) 725.144(B) Use of Class 2-LP or Class 3-LP Cables to Transmit Power and Data. This revision corrects an inadvertent omission of the temperature correction factors of Table 310.15(B)(2)(a) in Section 725.144(B)*

f. *FR 8941 (PI-1023, PI-1012, PI-1026, PI-2878, PI-1864) 725.144 [Excluding any Sub-Sections] Transmission of Power and Data – Clarified ampacity values and decimal places.*

g. *PI 1920 was resolved in deference to FR 8932 and FR 8941.*

2) Statements Opposing First Revisions

None

3) Motion

Motion to support all First Revisions with the affirmative statements provided above

	4) SCC18 Direction to IEEE-ER *(Secretary will select during the meeting)* ***SCC18 Directs the IEEE-ER to support all first revisions*** ***SCC18 Directs the IEEE-ER to support all first revisions and include the statements provided above for (list PIs or the following PIs)*** ***SCC18 Directs the IEEE-ER to support all first revisions with the exception of (list PIs or the following PIs) with the negative statements provided above***	
10:40	Break	Sponsor name
10:50	CMP4	Mark Gibbs
11:35	CMP5	Daleep Mohla
12:20	Lunch	Sponsor name
12:25	Special presentation	TBD reserve
1:05	CMP6	Dennis Nielsen
1:50	***CMP-10, 2020 NEC First Draft Report*** ***Articles 215, 225, 230, 240, 280 and 285*** **(*Steven Townsend, Principal - Alternate Vacant*)**	

1) Noteworthy Panel Actions

i) ***First Revision No. 8221-NFPA 70-2018 [New Article 242]***

Submitter: NEC-CMP Panel 10

New Article combining Article 280 (Surge Arresters, Over 1000 Volts) and 285 Surge-Protective Devices (SPDs), 1000 Volts or Less into new Article 242 Overvoltage Protection.

Committee Statement:

This revision relocates Articles 280 and 285 into a new Article 242. These requirements are more appropriately located immediately following Article 240 for overcurrent protection. The requirements are reformatted into a single article for clarity and usability. The requirements in new 242.49 are modified to identify the types of grounding conductors referenced within this section. This revision also incorporates the changes suggested in PI 2371; this should be reviewed by the Correlating Committee.

j) ***First Revision No. 8274-NFPA 70-2018 [Section 225.10]***

Submitter: NEC-CMP Panel 10 in response to Public Input No. 4284-NFPA 70-2017 [Section No. 225.10]

225.10 Wiring on Buildings (or Other Structures). The installation of outside wiring on surfaces of buildings (or other structures) shall be permitted for circuits not exceeding 1000 volts, nominal, as the following:

(1) Auxiliary gutters

(2) Busways

(3) Cable trays

(4) Cablebus

(5) Electrical metallic tubing (EMT)

(6) Flexible metal conduit (FMC)

(7) Intermediate metal conduit (IMC)

(8) Liquidtight flexible metal conduit (LFMC)

(9) Liquidtight flexible nonmetallic conduit (LFNC)

(10) Messenger-supported wiring

~~(11) Multiconductor cable~~

(12) Open wiring on insulators

(13) Reinforced thermosetting resin conduit (RTRC)

(14) Rigid metal conduit (RMC)

(15) Rigid polyvinyl chloride conduit (PVC)

(16) Type MC cable

(17) Type MI cable

(18) Type TC Cable

(19) Type UF cable

(20) Wireways

Circuits of over 1000 volts, nominal, shall be installed as provided in 300.37.

Committee Statement:

List item (11) is deleted. The term "multiconductor cable" inadvertently includes cable types not recognized as suitable for use as service entrance cable. A new list item is added to recognize Type TC cable as suitable for use as service entrance cable.

k) ***First Revision No. 8280-NFPA 70-2018 [New Section after 225.30(A)]***

Submitter: NEC-CMP Panel 10 in response to Public Input No. 526-NFPA 70-2017 [New Section after 225.30], Public Input No. 2518-NFPA 70-2017 [Section No. 225.30(A)], Public Input No. 2302-NFPA 70-2017 [New Section after 225.30(E)], Public Input No. 2254-NFPA 70-2017 [Section No. 225.30 [Excluding any Sub-Sections]], and Public Input No. 1505-NFPA 70-2017 [Section No. 225.30 [Excluding any Sub-Sections].

(B) Common Supply Equipment. *Where feeder conductors originate in the same panelboard, switchboard or other distribution equipment, and each feeder terminates in a single disconnecting means, not more than six feeders shall be permitted. Where more than one feeder is installed in accordance with this section all feeder disconnects in the building or structure supplied shall be grouped in the same location and the requirements of 225.33 shall not apply. Each disconnect shall be marked to indicate the load served.*

Committee Statement:

This revision will prescriptively permit more than one feeder under very limited circumstances. This new text will permit up to six feeders to supply a building or structure under the following conditions:

1) Each feeder must originate in the same panelboard, switchboard or other distribution equipment. This provision is safety driven in that all of the feeders supplying a building or structure are not only required to be in the same location, they must be located in the same distribution equipment.

2) Each feeder must terminate in a single disconnecting means. This revision prohibits the application of Section 225.33 which permits up to six disconnecting means from a single feeder.

3) Where more than one feeder is installed in accordance with this section all feeder disconnects in the building or structure supplied are required to be grouped in the same location.

4) Each disconnect must be marked to indicate the load served.
This revision simply permits multiple feeders, each with a single disconnecting means supplied, instead of a single large feeder with six disconnects. There is no need to limit the size of the feeder conductors as they will be protected at their rated ampacity.

Additionally, this revision will permit multiple smaller feeders, with smaller conductors and lower rated OCPD's to allow the designer to reduce the level of arc energy.

l) ***First Revision No. 8281-NFPA 70-2018 [Section No. 225.30(A)]***

Submitter: NEC-CMP Panel 10 in response to Public Input No. 2742-NFPA 70-2017 [Section No. 225.30(A)].

(A) Special Conditions.

Additional feeders or branch circuits shall be permitted to supply the following:
(1) Fire pumps
(2) Emergency systems
(3) Legally required standby systems
(4) Optional standby systems
(5) Parallel power production systems
(6) Systems designed for connection to multiple sources of supply for the purpose of enhanced reliability
(7) Electric vehicle charging systems listed, labeled, and identified for more than a single branch circuit or feeder
(8) *Docking facilities and piers*

Committee Statement:

This revision is necessary to recognize that multiple feeders are frequently required in docking facilities and piers. Limiting the number of outside branch circuits and feeders in these venues would negatively impact the ability of the designer to maximize the GFP protection required.

m) ***First Revision No. 8364-NFPA 70-2018 [Section No. 225.52(B)]]***

Submitter: NEC-CMP Panel 10 in response to Public Input No. 1251-NFPA 70-2017 [Section No. 225.52(B)]

(B) Type.

Each building or structure disconnect shall simultaneously disconnect all ungrounded supply conductors it controls and shall have a fault-closing rating not less than the ~~maximum~~ available ~~short-circuit~~ fault current ~~available~~ at its supply terminals.

Exception: Where the individual disconnecting means consists of fused cutouts, the simultaneous disconnection of all ungrounded supply conductors shall not be required if there is a means to disconnect the load before opening the cutouts. A permanent legible sign shall be installed adjacent to the fused cutouts and shall read DISCONNECT LOAD BEFORE OPENING CUTOUTS.

Where fused switches or separately mounted fuses are installed, the fuse characteristics shall be permitted to contribute to the fault closing rating of the disconnecting means.

Committee Statement:

This revision is part of a global effort in this code to correlate the use of the terms, short circuit current, fault current, and the use of the words available and maximum.

CMP-10 requests that the Correlating Committee review the actions on all related public inputs and provide Correlating Committee comments as needed.

n) ***First Revision No. 8546-NFPA 70-2018 [New Section after 230.66]***

Submitter: NEC-CMP Panel 10 in response to Public Input No. 4118-NFPA 70-2017 [New Section after 230.66] and Public Input No. 2696-NFPA 70-2017 [New Section after 230.66]

230.67 Surge Protection.

(A) Surge Protective Device. All services in dwelling units shall be provided with a surge protective device (SPD).

(B) Location. The surge protective device shall be an integral part of the service equipment or shall be located immediately adjacent thereto.

Exception. The surge protective device shall not be required to be located in the service equipment as required in (B), if located at each next level distribution equipment downstream toward the load.

(C) Type. The surge protective device shall be a Type 1 or Type 2 SPD.

(D) Replacement. Where service equipment is replaced, all of the requirements of this section shall apply.

Committee Statement:

This revision is intended to address the recognized need for surge protection to protect the sensitive electronics and systems found in most modern appliances, safety devices (such as AFCI, GFCI and smoke alarms) and equipment used in dwellings. Additionally, the expanding use of distributed energy resources (DER) within electrical systems often results in more opportunity or greater exposure for the introduction of surges into the system.

o) ***First Revision No. 8636-NFPA 70-2018 [Section No. 240.6(C))]***

Submitter: NEC-CMP Panel 10 in response Public Input No. 2308-NFPA 70-2017 [Section No. 240.6(C)] and Public Input No. 2293-NFPA 70-2017 [Section No. 240.6(C)]

(C) Restricted Access Adjustable-Trip Circuit Breakers.

A circuit breaker(s) that has restricted access to the adjusting means shall be permitted to have an ampere rating(s) that is equal to the adjusted current setting (long-time pickup setting). Restricted access shall be defined as located behind one of the following:

(1) ~~Removable~~ Located behind removable and sealable covers over the adjusting means

(2) ~~Bolted~~ Located behind bolted equipment enclosure doors

(3) ~~Locked~~ Located behind locked doors accessible only to qualified personnel

(4) Password protected, with password accessible only to qualified personnel

Committee Statement:

Modern electronic trip units provide the ability to set a password to keep unauthorized users from changing the settings. Section 240.6(C) is modified to include this method of restricted access. The phrase "located behind" is moved to each of the first three list items because it would not work with new list item 4.

p) ***First Revision No. 8669-NFPA 70-2018 [Section No. 240.33]***

Submitter: NEC-CMP Panel 10 first draft.

240.

~~33~~

33 Vertical Position.

(A)Vertical Position. Enclosures for overcurrent devices shall be mounted in a vertical position unless that is shown to be impracticable.

(B) Horizontal Position. Circuit breaker enclosures shall be permitted to be installed horizontally where the circuit breaker is installed in accordance with 240.81 . Listed busway plug-in units shall be permitted to be mounted in orientations corresponding to the busway mounting position.

(C) Face-up Position. Panelboards shall not be installed in the face-up position.

Committee Statement:

Editorial revisions are made to separate this section into first level subdivisions for clarity. A new first level subdivision is added to prohibit panelboards from being installed in a face-up position as this mounting orientation increases the likelihood that contaminants accumulate on the breakers and panelboard bussing, creating a hazard. Additionally, such mounting orientations result in a challenge with applying work space requirements. CMP-10 requests the Correlating Committee forward this action to CMP-1 and CMP-9 for information.

q) ***First Revision No. 8671-NFPA 70-2018 [Section No. 240.87(B)]***

Submitter: NEC-CMP Panel 10 in response to Public Input No. 2710-NFPA 70-2017 [Section No. 240.87(B)]

(B) Method to Reduce Clearing Time.

One of the following means shall be provided:

(1) Zone-selective interlocking

(2) Differential relaying

(3) Energy-reducing maintenance switching with local status indicator

(4) Energy-reducing active arc flash mitigation system

(5) An instantaneous trip setting that is less than the available arcing current. Temporary adjustment of the instantaneous trip setting to achieve arc energy reduction shall not be permitted.

(6) An instantaneous override that is less than the available arcing current

(7) An approved equivalent means

Informational Note No. 1: An energy-reducing maintenance switch allows a worker to set a circuit breaker trip unit to "no intentional delay" to reduce the clearing time while the worker is working within an arc-flash boundary as defined in NFPA 70E-2015, Standard for Electrical Safety in the Workplace, and then to set the trip unit back to a normal setting after the potentially hazardous work is complete.

Informational Note No. 2: An energy-reducing active arc flash mitigation system helps in reducing arcing duration in the electrical distribution system. No change in the circuit breaker or the settings of other devices is required during maintenance when a worker is working within an arc flash boundary as defined in NFPA 70E-2015, Standard for Electrical Safety in the Workplace.

Informational Note No. 3: An instantaneous trip is a function that causes a circuit breaker to trip with no intentional delay when currents exceed the instantaneous trip setting or current level. If arcing currents are above the instantaneous trip level, the circuit breaker will trip in the minimum possible time.

Informational Note No. 4: IEEE 1584–2002, IEEE Guide for Performing Arc Flash Hazard Calculations, is one of the available methods that provide guidance in determining arcing current.

Committee Statement:

This change clarifies that it is the final setting of the instantaneous trip that determines whether or not additional arc energy reduction techniques are required. It is not intended that the minimum setting of the instantaneous trip, as is typically shipped from the factory, be the determining factor of whether or not additional arc energy reduction is necessary, but rather the final setting as determined by the

electrical system requirements such as inrush characteristics or selective coordination. Nor is it the intent that the instantaneous trip be adjusted to a lower setting while a worker is working on the equipment, and then adjusted back to the desired setting after work is complete.

2) Motion

Motion to support all First Revisions

3) SCC18 Direction to IEEE-ER *(Secretary will select during the meeting)*

SCC18 Directs the IEEE-ER to support all first revisions

SCC18 Directs the IEEE-ER to support all first revisions and include the statements provided above for (list PIs or the following PIs)

SCC18 Directs the IEEE-ER to support all first revisions with the exception of (list PIs or the following PIs) with the negative statements provided above

2:35

CMP-11, 2020 NEC First Draft Report

Articles 409, 430, 440, 460, 470 and Annex D, Examples D8

(***Arthur J. Smith, III, Principal - Alternate, Steven Townsend***)

1) Noteworthy Panel Actions

r) ***First Revision No. 8000-NFPA 70-2018 [New Section after 430.122(A)]***

Submitter: NEC-CMP Panel 11 in response to (Public Input No. 2744-NFPA 70-2017 [Section No. 430.122]

(B) Output Conductors.

The output conductors from the power conversion equipment to the motor shall have an ampacity not less than 125 percent of the motor full-load current as determined by 430.6

Informational Note: The minimum ampacity required of output conductors is often different than that of the conductors supplying the power conversion equipment. See 430.130 and 430.131 for branch circuit protection requirements.

Committee Statement:

Drive technology is capable of providing output conductor short-circuit and ground-fault protection. There is a UL 61800-5-1 task group developing requirements to investigate and mark a drive for protecting its output conductors in individual-motor installations. This change permits the use of such a drive to decouple the output conductor sizing from the branch circuit protective device sizing.

s) ***First Revision No. 7989-NFPA 70-2018 [New Section after 430.122(B)]***

Submitter: NEC-CMP Panel 11 in response to (Public Input No. 300-NFPA 70-2017 [Section No. 430.131]

(D) Several motors or a motor and other loads.

Conductors supplying several motors and other loads, including power conversion equipment, shall have ampacity per 430.24, using the rated input current of the power conversion equipment as the considered full-load motor current for purposes of calculating ampacity.

Committee Statement:

This clarifies that when sizing conductors for several motors and other loads on one branch circuit, the user needs to use the rated input current to the power conversion equipment (not the Hp rating of the motor on the output of the power conversion equipment) in the calculations. This material is appropriately located in section 430.122, which covers conductor sizing.

t) ***First Revision No. 7999-NFPA 70-2018 [Section No. 430.130(A)]***

Submitter: NEC-CMP Panel 11 in response to (Public Input No. 2745-NFPA 70-2017 [Section No. 430.130]

(A) Circuits Containing Power Conversion Equipment.

Circuits containing power conversion equipment shall be protected by a branch-circuit short-circuit and ground-fault protective device in accordance with the following:

1. ***The rating and type of protection shall be determined by 430.52(C)(1), (C)(3), (C)(5), or (C)(6), using the full-load current rating of the motor load as determined by 430.6.***

Exception to (1): Where the power conversion equipment is listed and additionally marked "Suitable for Output Motor Conductor Protection," the maximum rating of the designated motor branch-circuit short-circuit and ground-fault protective device in Table 430.52 shall be permitted to be determined by replacing the motor full-load current with the power conversion equipment's rated input current.

Informational Note: Motor conductor short-circuit and ground-fault protection is provided by the power conversion equipment when the power conversion equipment is listed and additionally marked "Suitable for Output Conductor Protection" per the product standard.

(1) Where maximum branch-circuit short-circuit and ground-fault protective ratings are stipulated for specific device types in the

manufacturer's instructions for the power conversion equipment or are otherwise marked on the equipment, they shall not be exceeded even if higher values are permitted by 430.130(A)(1).

(2) A self-protected combination controller shall only be permitted where specifically identified in the manufacturer's instructions for the power conversion equipment or if otherwise marked on the equipment.

Informational Note: The type of protective device, its rating, and its setting are often marked on or provided with the power conversion equipment

(3) Where an instantaneous trip circuit breaker or semiconductor fuses are permitted in accordance with the drive manufacturer's instructions for use as the branch-circuit short-circuit and ground-fault protective device for listed power conversion equipment, they shall be provided as an integral part of a single listed assembly incorporating both the protective device and power conversion equipment

Committee Statement:

Drive technology is capable of providing output conductor short-circuit and ground-fault protection. There is a UL 61800-5-1 task group developing requirements to investigate and mark a drive for protecting its output conductors in individual-motor installations. This change permits the use of such a drive to decouple the output conductor sizing from the branch circuit protective device sizing.

u) ***First Revision No. 7970-NFPA 70-2018 [Section No. 430.26]***

Submitter: NEC-CMP Panel 11 in response to (Public Input No. 3219-NFPA 70-2017 [Section No. 430.26]

Where reduced heating of the conductors results from motors operating on duty-cycle, intermittently, or from all motors not operating at one time, the authority having jurisdiction may grant permission for feeder conductors to have an ampacity less than specified in 430.24, provided the conductors have sufficient ampacity for the maximum load determined in accordance with the sizes and number of motors supplied and the character of their loads and duties.

Informational Note: Demand factors determined in the design of new facilities can often be validated against actual historical experience from similar installations. ~~Refer to ANSI/IEEE Std. 141, IEEE Recommended Practice for Electric Power Distribution for Industrial Plants, and ANSI/IEEE Std. 241, Recommended Practice for Electric Power Systems in Commercial Buildings, for information on the calculation of loads and demand factor~~ For more information, see IEEE 3004.8 Recommended Practice for Motor Protection in Industrial and Commercial Power Systems.

Committee Statement:

This update replaces the obsolete IEEE Standard with the one which superseded by that standard.

v) ***First Revision No. 7939-NFPA 70-2018 [Section No. 440.10(B)]***

Submitter: NEC-CMP Panel 11 in response to (Public Input No. 1266-NFPA 70-2017 [Section No. 440.10(B)]

Note: This is one of several FRs that replaces the term "short-circuit" with "fault" to provide consistency with other locations in the NEC.

(B) Documentation

When motor controllers or industrial control panels of multimotor and combination load equipment are required to be marked with a short circuit current rating, the available ~~short circuit~~ fault current and the date the ~~short circuit~~ available fault current calculation was performed shall be documented and made available to those authorized to inspect, install, or maintain the installation.

Committee Statement:

The Fault Current Working Group was formed to support the Correlating Committee's Usability Task Group. The goal of the Fault Current Working Group was to analyze the usage of the terms "short-circuit" and "fault" throughout the NEC, and submit Public Inputs, as appropriate, to improve clarity, consistency, and usability. While "short-circuit" and "fault" have been used interchangeably throughout the NEC (and the whole electrical industry), there are subtle differences between the two. This has resulted in confusion and a lack of consistency. Thus, numerous related Public Inputs have been submitted by the Working Group.

The definition of "Fault Current, Available (Available Fault Current)" is taken from SR8 of NFPA70E-2018. The definition ("The largest amount of current capable of being delivered at a point on the system during a short-circuit condition") clarifies that "available fault current" is the highest short-circuit current that can flow at a particular point in the electrical system. The Informational Note, also taken from SR8 of NFPA70E-2018, ("A short-circuit can occur during abnormal conditions such as a fault between circuit conductors or a ground fault. See Figure 100.0") provides an example of the relationship between "short circuit" and "fault". Figure 100.0, also from SR8 of NFPA70E-2018, helps explain the difference between "available fault current", "short-circuit current rating", and "interrupting rating".

"Available short-circuit current" and "short-circuit current" are changed to "available fault current" for improved consistency.

"Maximum" is deleted in front of "maximum available fault current" (and "maximum available short-circuit current") because the new definition of "available fault current" clearly includes the maximum (largest). The only exceptions, which

remain unchanged, are in 250.4(A)(5) and 250.4(B)(3), where the word "maximum" is still appropriate and is necessary for a complete understanding of the requirement.

Equipment and component fault current ratings, short-circuit ratings, and short-circuit withstand ratings are changed to "short-circuit current ratings", in agreement with equipment and component listing standards. The only exceptions, which remain unchanged, are for switch "fault closing ratings", also to be in agreement with existing equipment and component listing standards.

Finally, "Short-circuit current calculation" is replaced with "available fault current calculation", improving consistency.

The panel also incorporates language requiring documentation of the calculation be made available to installers and maintainers in addition to inspectors.

w) ***First Revision No. 7925-NFPA 70-2018 [Section No. 440.9]***

Submitter: NEC-CMP Panel 11 in response to (Public Input No. 3582-NFPA 70-2017 [Section No. 440.9]

440.9 Grounding and Bonding.

Where ~~multimotor and combination-load~~ equipment is installed outdoors on a roof, an equipment grounding conductor of the wire type shall be installed in outdoor portions of metallic raceway systems that use ~~non-threaded~~ compression type fittings.

Committee Statement:

The revision improves clarity. The requirement is intended to require a grounding conductor in any metallic raceway system that does not use threaded fittings, for example threaded rigid metallic conduit. However, an EMT compression-type fitting has threads, but not the type of threads intended in the original text, such as threaded rigid metallic conduit. The proposed revisions clarify which types of conduit fittings do or do not require a grounding conductor.

The term "multimotor and combination-load" equipment might unintentionally limit the application of 440.9 to specific air-conditioning and refrigeration equipment. This revision clarifies the intent to include all air-conditioning and refrigeration equipment located outdoors on a roof.

x) ***First Revision No. 7913-NFPA 70-2018 [Section No. 460.25(D)]***

Submitter: NEC-CMP Panel 11

(D) Protective Devices Rated or Adjusted.

Protective devices for capacitors or capacitor equipment shall be rated or adjusted to operate within the limits of the safe zone for individual capacitors. ~~If the protective devices are rated or adjusted to operate within the limits for Zone 1 or Zone 2, the~~

~~***capacitors shall be enclosed or isolated.***~~

~~***In no event shall the rating or adjustment of the protective devices exceed the maximum limit of Zone 2.***~~

~~***Informational Note: For definitions of Safe Zone, Zone 1, and Zone 2, see ANSI/IEEE 18-1992, Shunt Power Capacitors.***~~

Committee Statement:

The definitions for Zone 1 and Zone 2 are not in ANSI/IEEE 18-1992 and are not easily found under any current published text. It is more common for capacitor manufacturers to define either "safe zone" or "unsafe zone". First Revision 7909 adds a definition for safe zone in accordance with what can be found under published documents and this revision removes references to capacitors used in zones other than safe zones.

2) Motion

Motion to support all First Revisions

3) SCC18 Direction to IEEE-ER *(Secretary will select during the meeting)*

SCC18 Directs the IEEE-ER to support all first revisions

SCC18 Directs the IEEE-ER to support all first revisions and include the statements provided above for (list PIs or the following PIs)

SCC18 Directs the IEEE-ER to support all first revisions with the exception of (list PIs or the following PIs) with the negative statements provided above

3:20	Break	Cerro Wire
3:30	CMP13	Mario Spina
4:15	2018 NFPA 70B	Bill Cantor
4:30	2020 NFPA 855	Bill Cantor
4:45	Close by Chair	Chris Hunter
5:00	Adjourn for the day	

	Tuesday March 12	

8:00

CMP-8, 2020 NEC First Draft Report

Articles 342, 344, 348, 350, 352, 353, 354, 355, 356, 358, 360, 362, 366, 368, 370, 372, 374, 376, 378, 380, 384, 386, 388, 390, 392, Chapter 9, Tables 1 through 4, Example D13, and Annex C

(Paul Myers, Principal - Alternate Vacant)

1) Noteworthy Panel Actions

a) FR 8326 Annex C – adding cable tray fill tables

Proposed_New_C14
_Tables_for_Cable_Ti

b) **Public Input No. 3484-NFPA 70-2017 [New Section after 368.2] T**he panel resolved PI 3484 from UL to add a requirement for listing in Article 368 Busways. Several manufacturers of medium voltage bus were contacted and asked their opinion. There was significant resistance to the concept due to the custom nature of, at least, a portion of most jobs. At the First Draft Meeting, several individuals on CMP-8 spoke against the PI for the very same reason. The NEC still continues to reference IEEE C37.23 for construction and testing requirements for metal enclosed bus and does not require listing by an NRTL.

c) **Public Input No. 3252-NFPA 70-2017 [Section No. 368.240]** Submitted by Mike Anthony was Resolved

368.240 Wiring 1000 Volts or Less, Nominal.
Secondary control devices and wiring that are provided as part of the metal-enclosed bus run shall be insulated by fire-retardant barriers from all primary circuit elements with the exception of short lengths of wire, such as at instrument transformer terminals.

Informational Note: For information regarding instrument transformers, see IEEE 3004.1 Recommended Practice for the Application of Instrument Transformers in Industrial and Commercial Power Systems

Panel Statement: The informational note referencing the IEEE standard is not necessary in this section. The primary subject for this section is short lengths of wiring not instrument transformers.

2) Statements Opposing First Revisions

None

3) Motion

Motion to support all First Revisions

4) SCC18 Direction to IEEE-ER *(Secretary will select during the meeting)*

	SCC18 Directs the IEEE-ER to support all first revisions ***SCC18 Directs the IEEE-ER to support all first revisions and include the statements provided above for (list PIs or the following PIs)*** ***SCC18 Directs the IEEE-ER to support all first revisions with the exception of (list PIs or the following PIs) with the negative statements provided above***	
8:45	CMP9	Paul Sullivan
9:30	CMP14	Will McBride
10:15	Break	Sponsor name
10:25	CMP15	Matt Dozier

11:10 ***CMP-16, 2020 NEC First Draft Report***

Articles 770, 800, 810, 820, 830, and 840

(William J. McCoy, Principal – Alternate Vacant)

1) Noteworthy Panel Actions

a) The informational note at the beginning of Articles 770, 810, 820, and 830 referencing the figures at the beginning of Article 800 were deleted (FR-7530, FR-7929, FR-7938, and FR-7800) because the figures were moved to the appropriated sections within Article 800. The one figure which illustrates a bonding conductor in a communications installation was moved to Section 800.100(B)(1) (FR-7715) and the other figure which illustrates the grounding electrode conductor in a communications installation was moved to Section 800.100(B)(2) (FR-7717).

b) Several Public Inputs were submitted to add the following wording in 770.2 (FR-7535), 800.2 (FR-7656), 820.2 (FR-7943), and 830.2 (FR-7803). See Part 1 of Article 100. <u>For purposes of this article, the following additional definitions apply.</u>

c) Public Inputs from the Usability Task Group recommending deleting Section 770.24 in its entirety and making reference to Section 300.24. These PIs were resolved, but FR-7581 established the following wording in Section 770.24.

770.24 Mechanical Execution of Work.
Optical fiber cables shall be installed in a neat and workmanlike manner. Cables installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable will not be damaged by normal building use. Such cables shall be secured by hardware including straps, staples, cable ties, hangers, or similar fittings designed and installed so as not to damage the cable. The installation shall also conform with 300.4~~(D) through (G)~~ and 300.11. Nonmetallic cable ties and other nonmetallic cable accessories used to secure and support cables in other spaces used for environmental air (plenums) shall be listed as having low smoke and heat release properties.

Informational Note No. 1: Accepted industry practices are described in ANSI/NECA/BICSI 568-2006, *Standard for Installing Commercial Building*

Telecommunications Cabling; ANSI/NECA/FOA 301-2009, *Standard for Installing and Testing Fiber Optic Cables*; and other ANSI-approved installation standards.

Informational Note No. 2: See 4.3.11.2.6.5 and 4.3.11.5.5.6 of NFPA 90A-2012~~8~~, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, for discrete combustible components installed in accordance with 300.22(C).

Informational Note No. 3: Paint, plaster, cleaners, abrasives, corrosive residues, or other contaminants may result in an undetermined alteration of optical fiber cable properties.

Even though there is no electrical current flowing over an optical fiber cable, critical circuits can be established and the optical fiber cable needs to be installed under the full requirement of Section 300.4.

d) A new subsection was added to Section 770.110 to include cable trays which read as follows.

(D) Cable Trays. Optical fiber cables shall be permitted to be installed in metal or listed non-metallic cable tray systems**.**

This insertion was accomplished by FR-7597.

e) The following wording was added to Section 770.133(A) as a Panel First Revision (FR-7515)

Conductive optical fiber cables contained in an armored or metal clad type sheath and nonconductive optical fiber cables shall be permitted to occupy the same cable tray or raceway with conductors of electric light, power, Class 1, non-power-limited fire alarm, Type ITC, or medium-powered network-powered broadband communications circuits operating at 1000 volts or less. Conductive optical fiber cables without an armored sheath or metal clad type sheath shall not be permitted to occupy the same cable tray or raceway with conductors for electric light, power, Class 1, non-power-limited fire alarm, Type ITC, or medium-power network-powered broadband communications circuits.

f) The Usability Task Group took two approaches to redoing Chapter 8. One approach was to just have one Article that would include all of what is now in Articles 800, 820, 830, and 840 (PI 2840). The other approach was to just create a new Article (8XX) (PI 2858) which would include all the redundant requirements eliminating them from Article 800, 820, 830, and 840. PI 2840 was resolved by CMP-16 and PI 2858 was made a First Revision (FR-7512). When the hand vote was taken FR-7512 only passed with a simple majority rather than a two thirds majority required during the balloting; the companion PIs to 2858 were resolved and draft document created. IF FR-7512 fails during balloting, then Chapter 8 requirements will not be gutted. A Public Comment will be submitted for the companion PIs during the comment stage and if FR-7512 does receive the two thirds affirmative vote, then the companion PIs to PI 2858 will be worked during the Second Revision meeting.

g) In Section 800.2 the definition of Communications Circuit was changed (FR-7657) as follows
The circuit ~~that~~ electrically extends ~~voice, audio, video, data, interactive services, telegraph (except radio), outside wiring for fire alarm and burglar alarm~~ service from the communications utility or service provider up to and including ~~to~~ the customer's communications equipment ~~up to and including terminal equipment such as a telephone, fax machine, or answering machine~~.

The word electrically is incorrect because some services are optical or wireless. Thus, this word should be removed. This removal can be accomplished with a Public Comment and handled during the Second Revision Meeting

h) In Section 800.3 (FR-7665), the following wording was inserted to state that other Articles outside of Chapter 8 only applied if directly referenced. The need for this wording was because of PI 2818 that was submitted to Article 90 trying to have the exclusion of Chapter 8 removed from Section 90.3. Public Input 2818 received a simple majority when the hand vote was taken during the CMP-1 meeting. If PI 2818 fails during the balloting the wording associated with FR-7665 will be removed during the Second Draft Meeting.

Installations of communications circuits and equipment shall comply with 800.3(A) through (H). Only those sections of Chapters 1 through 7 referenced in Article 800 shall apply to communications circuits and equipment.

This same wording was inserted in Sections 820.2 (FR-7944), 830.4 (FR-7813), and 840.4 (FR 7841) with the appropriate Section identified.

i) In several locations throughout Chapter 8 the word metallic was changed to metal where appropriate. One such location was Section 800.49 (FR-7968) as reflected in the following.

800.49 ~~Metallic~~ Metal Entrance Conduit Grounding.
~~Metallic~~ Metal condiut containing communications entrance wire or cable shall be connected by a bonding conductor or grounding electrode conductor to ~~a grounding electrode~~ the building grounding electrode system in accordance with 800.100(B).

j) The following wording was inserted in Section 800.170 (FR-7779).

800.170 Equipment.

Communications equipment shall be listed as being suitable for electrical connection to a communications network. Power sources used to provide power on premises communications wire and cables shall meet the requirements of 840.170(G).

The words “service provider” were added to the definition of Network-Powered Broadband Communications Circuits in Section 830.2 (FR-7808) as shown below.

The circuit extending from the communications utility’s or service provider's serving terminal or tap up to and including the NIU.

k) A definition for Broadband was included in Section 840.2 (FR-7856) which reads as follows.

l) **Broadband.** Wide bandwith data transmission which transports multiple signals, protocols, and traffic types over various media types.

A definition for Premises Power was included in Section 840.2 (FR-7859) which reads as follows.

Premises Powered. Using power provided locally from the premises.

A definition for Communications Service Provider was included in Section 840.2 (FR-7862) which reads as follows.

Communications Service Provider. An organization, business, or individual that offers communications services to others.

m) A new Section 840.94 (FR-7889) was created to address circuits leaving the building which reads as follows.

Premises Circuits Leaving the Building. Where circuits leave the building to power equipment remote to the building or outside the exterior zone of protection defined by a 46 m (150 ft) radius rolling sphere 800.90 and 800.93 shall apply.

In addition, Section 840.109 (FR-7891) was created which read as follows.

Premises Circuits Leaving the Building. Where circuits leave the building or power equipment remote to the building or outside the exterior zone of protection defined by a 46 m (150 ft) radius rolling sphere 800.100 and 800.106 shall apply.

The purpose of adding these two Sections was to address new technology being deployed in the Industry where the power is derived at the premises and fed back to the network.

n) For Section 840.160. This PI 1020 resulted in FR-7892 which reads as follows.

Powering Circuits. Communications cables listed in accordance with 800.179, in addition to carrying the communications circuit, shall also be permitted to carry circuits for powering communications equipment ~~Where the power supplied over a communications cable to communications equipment is greater than 60 watts, communications cables and power circuit~~ listed in accordance with 800.170. The power source shall be listed in accordance with 840.170(G). Installation of listed communications cable shall comply with 725.144 where communications cables are substituted for Class 2 and Class 3 cables in accordance with 725.154(A).

Exception: Installing communications cables in compliance with 725.144 shall not be required for listed 4-pair communications cables where the rated current does not exceed 0.3 amperes in any conductor 24 AWG and larger.

Informational Note: A typical communications cable for this application is a 4-pair cable sometimes referred to as Category 5e (or higher) LAN cable or balanced twisted pair cable. These types of cables are often used to provide Ethernet (PoE) type services. A large number of such powering cables bundled together can cause overheating of the wiring if not controlled as described in Table 725.144.

2) Statements Opposing First Revisions

None

3) Motion

Motion to support all First Revisions

4) SCC18 Direction to IEEE-ER

SCC18 Directs the IEEE-ER to support all first revisions

SCC18 Directs the IEEE-ER to support all first revisions and include the statements provided above for (list PIs or the following PIs)

SCC18 Directs the IEEE-ER to support all first revisions with the exception of (list PIs or the following PIs) with the negative statements provided above

11:55

CMP-17, 2020 NEC First Draft Report

Articles 422, 424, 425, 426, 427, 680, 682

(Chet Sandberg, Principal - Alternate Vacant)

1) Noteworthy Panel Actions

Most of the First Revisions were nomenclature enhancement, minor changes to agree with the rest of the code or editorial changes. The following were noted as IEEE content or interesting. The "heavy lifting" for IEEE changes was implemented in the last code cycle (2017). These changed the requirements for ground fault protection from "personnel" to equipment to reduce the possibility of **nuisance** tripping.

Both of the IEEE submissions for this code cycle (by Ben Johnson) were accepted in principle. They updated the IEEE standards and recommended practices to current versions. There are now 5 standards or recommended practices for IEEE 844 and the committee didn't want to put them all in the *Informational Note*, so the wording was changed to "applicable sections" to lead the reader to the source document but did not specify which part of the five 844 recommended practices.

426.1 Scope.
~~The requirements of this article shall apply to electrically energized heating systems and~~ This article covers fixed outdoor electric deicing and snow melting equipment and the installation of these systems.

(A) Embedded.
Embedded in driveways, walks, steps, and other areas.
(B) Exposed.
Exposed on drainage systems, bridge structures, roofs, and other structures.

Informational Note: For further information, see ANSI/IEEE 515.1-2012, *Standard for the Testing, Design, Installation and Maintenance of Electrical Resistance Trace Heating for Commercial Applications*. Also see applicable sections of the IEEE 844/CSA 293 series of standards for Fixed Outdoor Electric Deicing and Snow-Melting Equipment

427.1 Scope.
~~The requirements of this article shall apply to~~ This article covers electrically energized heating systems and the installation of these systems used with pipelines or and vessels or both.

Informational Note: For further information, see ANSI/IEEE 515-~~2011~~ 2017 , *Standard for the Testing, Design, Installation and Maintenance of Electrical Resistance Trace Heating for Industrial Applications*; ~~ANSI/IEEE 844-2000, *Recommended Practice for Electrical Impedance, Induction, and Skin Effect Heating of Pipelines and Vessels* ; and ANSI/NECA 202-2013, *Standard for Installing and Maintaining Industrial Heat Tracing Systems* .~~

Also see applicable sections of the IEEE 844/CSA 293 series of standards for alternate technologies for Fixed Electric Heating Equipment for Pipelines and Vessels .

The majority of changes to 680 is the result of the successful approval of TIA 1349, changing GFCI (ground fault protection of personnel) to general ground fault protection on docks in marinas. This TIA was approved (SCC 18 voted affirmative) and the 680 section is being cleaned up to match the TIA and prevent nuisance tripping because of leakage currents above the 4 to 6 ma settings for GFCI's.

2) Statements Opposing First Revisions

None

3) Motion

Motion to Support of all First Revisions

4) SCC18 Direction to IEEE-ER *(Secretary will select during the meeting)*

SCC18 Directs the IEEE-ER to support all first revisions

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SCC18 Directs the IEEE-ER to support all first revisions with the exception of (list PIs or the following PIs) with the negative statements provided above

12:40	Lunch	NUTRIEN (formerly PotashCorp)

1:25

CMP-18, 2020 NEC First Draft Report

Articles 393, 406, 410*, 411, 600, 605 *(ceiling grid power, receptacles, luminaires, low-voltage lights, electric signs and lighting, systems furniture)*

** An apparent omission after the 2011 NEC left Article 410 unassigned for 2014 and 2017!*

(*Kurt Clemente, Principal, - Alternate Vacant*)

1) Summary

204 Public Inputs

Code panel met for 2-1/2 days

2) Noteworthy Panel Actions

a) ***PI 229, FR#8319*** for 406.4(D)(6) to allow removal of markings for automatically controlled receptacles if automatic control is no longer required. The group debated the use of occupancy-switched receptacles, in particular whether this revision would send a message to building owners to remove this Energy-Code building element.

b) ***PI 1066, RESOLVED***. Would have standardized hard-wired system furniture as 3-circuits with 3 phase, 3 neutral, and 2 grounding (8-conductor) configuration. The input was debated as addressing an acknowledged issue in the Code, but too restrictive for the current available field of systems furniture products.

c) ***PI 1457, FR#8378*** to add 406.12 for the use and identification of single-pole connectors (such as Cooper's Cam-Lok). ANSI/UL 1691 provides the necessary details to permit inspection for Code compliance.

d) ***PI 1720, RESOLVED***. Would have addressed the issue of chandeliers installed in walk-in closets in larger houses (not presently permitted). The submitter cited instances of builders installing cheap surface-mounted lights to pass inspection, with likely chandelier replacement later. The Panel felt the danger from builders evading inspection efforts did not warrant modifying the Code.

e) ***PI 1805, FR#8412*** to add 410.118 to formalize that a recessed luminaire may not be used to access outlet boxes, pull boxes, junction boxes, or conduit bodies.

f) ***PI 2150, RESOLVED***. Would have added a definition to the NEC for luminaire efficacy to reduce confusion related to Energy Codes. The Panel felt this had no place in the NEC, which has no current requirements for luminaire efficacy.

g) ***PI 2587, RESOLVED***. Would have deleted 410.48 which addresses luminaire wiring arrangement and exposure to physical damage. This PI was one of 5 similar inputs submitted by UL, who felt UL standards already addressed these issues and AHJ inspection was unnecessary. The Panel disagreed that AHJ inspection should be limited to looking for the UL label, and the IAEI inspector reps.

h) ***PI 2644, FR#8139*** to add 605.1(B) clarifying that Code requirements for systems furniture do not apply to chairs, free-standing desks, tables, storage units, and shelving units associated with systems furniture.

i) ***PI 3141, FR#8394*** to clean up and clarify requirements for luminaires in bathtubs and showers.

j) ***PI 3279, RESOLVED***. Would have clarified that requirements for "125 and 250 volt" receptacles apply to 208V receptacles. The Panel felt this already clear.

k) ***PI 3427, RESOLVED***. Would have added in 406 Receptacles a definition for reliability. The Panel quickly voted to resolve (my vote dissenting).

l) ***PI 3693, FR#8350*** to modify 406.9(C) for receptacles in bathtub and shower spaces. Previously receptacles were prohibited within or directly over, but now receptacles are prohibited in or within reach (3 feet). The Panel had minor concerns of constructability – the Code language regarding "shower stall threshold" has become vague given ADA bathroom requirements – but in general all agreed with the intent.

3) Statements Opposing First Revisions

None

4) Motion

Motion to support all First Revisions *(unless SCC-18 desires to add language amplifying my vote against resolution of PI 3427 reliability).*

5) SCC18 Direction to IEEE-ER *(Secretary will select during the meeting)*

SCC18 Directs the IEEE-ER to support all first revisions

SCC18 Directs the IEEE-ER to support all first revisions and include the statements provided above for (list PIs or the following PIs)

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	Other NFPA Reports Each ER will have a maximum of 15 minutes for his status and timeline report - may use PowerPoint if desired	
2:10	2018 NFPA 70E	Daleep Mohla
2:25	2018 NFPA 79	Daleep Mohla
-------	2020 NFPA 73	
2:40	**Revisit Outstanding CMP revisions & SCC18 committee approvals** Status of approval of new P&Ps	
3:15	Break	Eaton Corp.
3:25	**New business** 1. Reports to sponsors 2. Proposals for 2020 NEC IEEE comments due no later than August 30th 3. SCC18 Full Committee Face-Face 12/6-7 or 10-11/18. This meeting would work off of the 2nd DRAFT. Then schedule a conference call to address changes from the DRAFT to final ballot. The full SCC18 will be polled to find preferred dates. 4. Annette Reilly, IEEE Standards Association Standards Board, Chair, Audit Committee (AudCom) to speak regarding revised policies and procedures for SCC18 and Chris to	Chris Hunter

	discuss creation of Ad Hoc committee to update SCC18 P&Ps 5. IEEE SA & SASB, SCC18 Classifications 6. Need to fill vacant positions NFPA 70 CMP 7, 12, NFPA 73 (unless filled) 7. Recognition of members who have retired or passed Other	
4:30	Adjourn	Chris Hunter

SCC18 March 12-13, 2018 Meeting Agenda

Action Items

Item	Description	Person Responsible for Completion	Target Completion Date	Comments
1				
2				
3				
4				
5				
6				