# EXHIBIT 61

FORM FOR PROPOSALS FOR 1999 NATIONAL ELECTRICAL CODE

**INSTRUCTIONS PLEASE READ CAREFULLY**
Type or print in Black Ink. Use a separate copy for each proposal. Limit each proposal to a SINGLE section. All proposals must be received by NFPA by 5 p.m., E.S.T., Friday November 8, 1996 to be considered for the 1999 National Electrical Code. Proposals received after 5:00 p.m., E.S.T., Friday, November 8, 1996 will be returned to the submitter.

LOG # 1006-1
Date Rec'd: OCT 21 1996
Office Use Only

Date: 10/18/96 Name: Paul Petit Tel. No. 1-401-726-0700 EX.330

Company American Insulated Wire Corp.

Street Address: P.O. Box 880 City: Pawtucket State: RI Zip: 02862

Please Indicate Organization Represented (if any): N/A

1. Section/Paragraph: Section 310 Table 310-13

2. Proposal recommends (check one): new text revised text deleted text

3. Proposal (include proposed new wording, or identification of wording to be deleted):
For types USE and USE-2 include size 14 AWG as the smallest size to be made.
(See attached table with recommended change)

NO NO-SM

4. Statement of Problem and Substantiation for Proposal:

We have had numerous requests for 14 AWG type USE over the years especially for type USE exposed to sunlight. The black thermosets type USE performs better than the black PVC type UF cables. Type USE and type USE-2 cables are suitable for direct burial but limited to 12 AWG as the smallest size, yet underground feeder cables are also suitable for direct burial and are allowed as small as 14 AWG. Therefore, 14 AWG types USE and USE-2 cables should also be allowed as a new code size.

5. This Proposal is original material
This Proposal is not original material, its source (if known) is as follow:

Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.

*I hereby grant the NFPA the nonexclusive, royalty-free rights, including non-exclusive, royalty-free rights in copyright, in this proposal, and I understand that I acquire no rights in any publication of NFPA in which this proposal in this or another similar or analogous form is used.*

Paul Petit
Signature (Required)

Mail to: Secretary, Standards Council, National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101 Quincy, MA 02269 or FAX to 617-770-3500

# EXHIBIT 62

# FORM FOR PROPOSALS FOR 1999 NATIONAL ELECTRICAL CODE®

**INSTRUCTIONS PLEASE READ CAREFULLY**
Type or print in Black Ink. Use a separate copy for each proposal. Limit each proposal to a SINGLE section. All proposals must be received by NFPA by 5 p.m., E.S.T., Friday November 8, 1996 to be considered for the 1999 National Electrical Code. Proposals received after 5:00 p.m., E.S.T., Friday, November 8, 1996 will be returned to the submitter.

LOG # 1626
Date Rec'd: NOV 05 1996
Office Use Only

Date: 11-1-96 Name: ART PETRUZATES Tel. No. (316) 942-8223

Company: IDEAL PRODUCTS INC. P.O. BOX 17227

Street Address: 2520 S. SHERIDAN City: WICHITA State: KS Zip: 67217

Please Indicate Organization Represented (if any):

1. Section/Paragraph: 370-16(a) EXCEPTION NO. 1

2. Proposal recommends (check one): ☒ new text ☐ revised text ☐ deleted text

3. Proposal (include proposed new wording, or identification of wording to be deleted):
Where PLASTER RINGS of the VARIABLE TYPE ARE USED, and adjusted to a greater depth than the minimum setting, it shall be permissible for the Authority having Jurisdiction to ALLOW a VOLUME CALCULATION that is EQUAL to the VOLUME of a PLASTER RING of EQUAL or EQUIVALENT depth.

4. Statement of Problem and Substantiation for Proposal:
Currently, the UL LISTED VOLUME of PLASTER RINGS of the ADJUSTABLE type IS that of the RING at its MINIMUM SETTING, The does not ALLOW the electrician to take ADVANTAGE of the increased VOLUME which occurs when the RING IS extended to a greater depth, (AT LEAST 60% increase IN MANY CASES) This proposal would ALLOW the Authority having JURISDICTION to ALLOW the use of this extra VOLUME, BY ALLOWING the Authority to compare the ADJUSTABLE RING VOLUME to a fixed RING VOLUME, IT IS SIMPLE to CALCULATE the ALLOWABLE VOLUME

5. ☒ This Proposal is original material
☐ This Proposal is not original material, its source (if known) is as follow:

Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.

*I hereby grant the NFPA the nonexclusive, royalty-free rights, including non-exclusive, royalty-free right in copyright, in this proposal, and I understand that I acquire no rights in any publication of NFPA in which this proposal in this or another similar or analogous form is used.*

A. Petruzates
Signature (Required)

Mail to: Secretary, Standards Council, National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101 Quincy, MA 02269 or FAX to 617-770-3500

# EXHIBIT 63

# FORM FOR PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS



DATE: 10/31/95 NAME: Thomas F. Pegg PHONE: (412)645-8583

P#108

ADDRESS: 333 Forbes Avenue Pittsburgh, PA 15222

REPRESENTING: HILB, ROGAL AND HAMILTON COMPANY OF PITTSBURGH, INC.

1a. Document Title: National Electric Code NFPA No. & Yr.: 70-1993

2. Proposal Recommends: New Text

3. Proposal:

Add to 210-8. Ground-Fault Circuit-Interupter Protection for Personnel
B. Receptacles (1)
Add language: That all outdoor outlets be protected by Ground-Fault Protection.

4. Statement of Problem and Substantiation for Proposal:

We believe the code is ambiguous in where GFI outlets are needed or should be provided.

We have a client who is a major distributor of vending machines. They are frequently required to provide vending machines for outdoor use. It would seem logical to have these outdoor receptacles protected by GFI's.

5. This proposal is original material.

I hereby grant NFPA the non-exclusive, royalty free rights, including non-exclusives royalty-free rights in copyright, in the proposal and I understand that I acquire no rights in any publication of NFPA in which this proposal in this or another similar or analogous form is used.

Thomas F. Pegg

Thomas F. Pegg

# EXHIBIT 64

**FORM FOR PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS**

**Mail to: Secretary, Standards Council**
**National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02269-9101**
**Fax No. 617-770-3500**
Note: All proposals must be received by 5:00 p.m. EST/EDST on the published proposal-closing date.

**If you need further information on the standards-making process, please contact the Standards Administration Department at 617-984-7249.**

Date 12-10-95 Name Joseph A. Tedesco Tel. No. 6175237137

Company

Street Address 350 North Street Boston, MA 02113

Please Indicate Organization Represented (if any)

1. a) NFPA Document Title NEC NFPA No. & Year 70-1996

b) Section/Paragraph 110-34 (c)

2. Proposal Recommends: (Check one) ☐ new text ☑ revised text ☐ deleted text

FOR OFFICE USE ONLY
Log # 131
Date Rec'd DEC 26 1995

3. Proposal (include proposed new or revised wording, or identification of wording to be deleted):

Please delete the word: "substantially" so the 3rd paragraph will read as follows: "Where the voltage exceeds 600 volts, nominal, permanent and conspicuous warning signs shall be provided reading as follows: "DANGER -- HIGH VOLTAGE -- KEEP OUT!"

4. Statement of Problem and Substantiation for Proposal: (Note: State the problem that will be resolved by your recommendation; give the specific reason for your proposal including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.)

Sections 230-203, 370-72(e), 665-23, 710-43 and 710-45 do not use the word "substantially" and are specific.

5. ☑ This Proposal is original material. (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought, or research and, to the best of his/her knowledge, is not copied from another source.)

☐ This Proposal is not original material; its source (if known) is as follows:

Note 1: Type or print legibly in black ink.
Note 2: If supplementary material (photographs, diagrams, reports, etc.) is included, you may be required to submit sufficient copies for all members and alternates of the technical committee.

*I hereby grant NFPA the non-exclusive, royalty-free rights, including non-exclusive, royalty-free rights in copyright, in this proposal and I understand that I acquire no rights in any publication of NFPA in which this proposal in this or another similar or analogous form is used.*

Joseph A. Tedesco
Signature (Required)

**PLEASE USE SEPARATE FORM FOR EACH PROPOSAL**

# EXHIBIT 65

## FORM FOR PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS

**Mail to: Secretary, Standards Council**
**National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02269-9101**
**Fax No. 617-770-3500**

Note: All proposals must be received by 5:00 p.m. E.S.T./E.D.S.T. on the published proposal closing date.

**Date** 12/14/95 **Name** Stan Kaufman **Tel. No.** 770-798-2833

**Address:** AT&T, 2000 Northeast Expressway, Room 2G44, Norcross, GA 30071

**Representing (Please indicate organization, company or self)**

**1. a) Document Title:** National Electrical Code **NFPA No. & Year** 70, 1999

**b) Section/Paragraph:** 725-61 (f)

**FOR OFFICE USE ONLY**
**Log #:** 205
**Date Rec'd:**
**Proposal #:**

**2. Proposal recommends: (Check one)** deleted text

**3. Proposal (include proposed new or revised wording, or identification of wording to be deleted):**

Delete the words "wire or" from section 725-61 (f) to read as follows:

DEC 2 8 1995

Type CL2 or CL3 cable shall be used.

**4. Statement of Problem and Substantiation for Proposal:**

Wire is not defined in this article.

**5. This Proposal is not original material; its source (if known) is as follows:**

725-61 (f)

*I hereby grant NFPA the non-exclusive, royalty-free rights, including non-exclusive, royalty-free rights in copyright, in this proposal and I understand that I acquire no rights in any publication of NFPA in which this proposal in this or another similar or analogous form is used.*

Signature (Required)

**PLEASE USE SEPARATE FORM FOR EACH PROPOSAL**

F725-61FDOC

# EXHIBIT 66

**FORM FOR PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS**

**Mail to: Secretary, Standards Council**
**National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02269-9101**
**Fax No. 617-770-3500**

Note: All proposals must be received by 5:00 p.m. EST/E.D.S.T. on the published proposal closing date.

**Date** 12/18/95 **Name** Stan Kaufman **Tel. No.** 770-798-2833

**Address:** AT&T, 2000 Northeast Expressway, Room 2G44, Norcross, GA 30071

**Representing (Please indicate organization, company or self)**

**1. a) Document Title:** National Electrical Code **NFPA No. & Year** 70, 1999

**b) Section/Paragraph:** 800-52 (a)

**2. Proposal recommends: (Check one)** new text

**FOR OFFICE USE ONLY**
**Log #:** 222
**Date Rec'd:** DEC 28 1995
**Proposal #:** _____

**3. Proposal (include proposed new or revised wording, or identification of wording to be deleted):**

Reword section 800-52 (a) as shown below.

**800-52. Installation of Communications Wires, Cables, and Equipment.**

Communications wires and cables from the protector to the equipment or, where no protector is required, communications wires and cables attached to the outside or inside of the building shall comply with (a) through (e) below.

**(a) Separation from Other Conductors.**

**(1) In Raceways, Boxes, and Cables.**

***a. Other Power-Limited Circuits.*** Communications cables shall be permitted in the same raceway or enclosure with cables of any of the following:

1. Class 2 and Class 3 remote-control, signaling, and power-limited circuits in compliance with Article 725.
2. Power-limited fire alarm systems in compliance with Article 760.
3. Nonconductive and conductive optical fiber cables in compliance with Article 770.
4. Community antenna television and radio distribution systems in compliance with Article 820.

**b. Class 2 and Class 3 Circuits.** Class 1 circuits shall not be run in the same cable with communications circuits. Class 2 and Class 3 circuit conductors shall be permitted in the same cable with communications circuits, in which case the Class 2 and Class 3 circuits shall be classified as communications circuits and shall meet the requirements of this article. The cables shall be listed as communications ~~cables~~ or multipurpose cables.

P80052A.DOC

*Exception: Cables constructed of individually listed Class 2, Class 3, and communications cables under a common jacket shall not be required to be classified as communications cable. The fire-resistance rating of the composite cable shall be determined by the performance of the composite cable.*

222-2

**c. Electric Light, ~~or~~ Power, Class 1 and Nonpower-limited Fire Alarm Circuits.**

**1. In Raceways, Compartments and Boxes.** Communications conductors shall not be placed in any raceway, compartment, outlet box, junction box, or similar fitting with conductors of electric light, ~~or~~ power, Class 1, or nonpower-limited fire alarm circuits.

*Exception No. 1: Where all of the conductors of electric light, ~~or~~ power, Class 1, and ~~or~~ nonpower-limited fire alarm circuits are separated from all of the conductors of communications circuits by a barrier.*

*Exception No. 2: ~~Electric light, or~~ pPower, ~~Class 1, and or nonpower-limited fire alarm~~ circuit conductors in outlet boxes, junction boxes, or similar fittings or compartments where such conductors are introduced solely for power supply to communications equipment. ~~or for connection to remote-control equipment~~. The ~~electric light or~~ power circuit conductors shall be routed within the enclosure to maintain a minimum of 0.25 in. (6.35 mm) separation from the communications circuit conductors.*

**2. In Shafts.** Communications wires and cables run in the same shaft with conductors of electric light, ~~or~~ power, Class 1, or nonpower-limited fire alarm circuits shall be separated from electric light, ~~or~~ power ~~conductors~~, Class 1, and ~~or~~ nonpower-limited fire alarm circuit conductors by not less than 2 in. (50.8 mm).

*Exception ~~No. 1~~: Where either (1) all of the conductors of ~~the~~ electric light, ~~or~~ power, Class 1, and ~~or~~ nonpower-limited fire alarm circuits are in a raceway, or in metal-sheathed, metal-clad, nonmetallic-sheathed, or Type UF cables, or (2) all of the conductors of communications circuits are encased in raceway.*

*~~Exception No. 2: Where the electric light or power, Class 1 or nonpower-limited fire alarm conductors are in a raceway, or in metal-sheathed, metal-clad, nonmetallic-sheathed, or Type UF cables.~~*

**(2) Other Applications.** Communications wires and cables shall be separated at least 2 in. (50.8 mm) from conductors of any electric light, ~~or~~ power ~~circuits~~, Class 1, and ~~or~~ nonpower-limited fire alarm circuits.

*Exception No. 1: Where either (1) all of the conductors of ~~the~~ electric light, ~~or~~ power, Class 1, and ~~or~~ nonpower-limited fire alarm circuits ~~conductors~~ are in a raceway or in metal-sheathed, metal-clad, nonmetallic-sheathed, Type AC, or Type UF cables, or (2) all of the conductors of communications circuits are encased in raceway.*

*Exception No. 2: Where the communications wires and cables are permanently separated from the conductors of electric light, power, Class 1, and nonpower-limited fire alarm circuits ~~the other circuit~~ by a continuous and firmly fixed nonconductor, such as porcelain tubes or flexible tubing, in addition to the insulation on the wire.*

P80052A.DOC

**If all the above marked revisions are accepted, section 800-52 will read as follows:**

222-3

**800-52. Installation of Communications Wires, Cables, and Equipment.**

Communications wires and cables from the protector to the equipment or, where no protector is required, communications wires and cables attached to the outside or inside of the building shall comply with (a) through (e) below.

**(a) Separation from Other Conductors.**

**(1) In Raceways, Boxes, and Cables.**

**a. Other Power-Limited Circuits.** Communications cables shall be permitted in the same raceway or enclosure with cables of any of the following:

1. Class 2 and Class 3 remote-control, signaling, and power-limited circuits in compliance with Article 725.
2. Power-limited fire alarm systems in compliance with Article 760.
3. Nonconductive and conductive optical fiber cables in compliance with Article 770.
4. Community antenna television and radio distribution systems in compliance with Article 820.

**b. Class 2 and Class 3 Circuits.** Class 1 circuits shall not be run in the same cable with communications circuits. Class 2 and Class 3 circuit conductors shall be permitted in the same cable with communications circuits, in which case the Class 2 and Class 3 circuits shall be classified as communications circuits and shall meet the requirements of this article. The cables shall be listed as communications or multipurpose cables.

*Exception: Cables constructed of individually listed Class 2, Class 3, and communications cables under a common jacket shall not be required to be classified as communications cable. The fire-resistance rating of the composite cable shall be determined by the performance of the composite cable.*

**c. Electric Light, Power, Class 1 and Nonpower-limited Fire Alarm Circuits.**

**1. Raceways, Compartments and Boxes.** Communications conductors shall not be placed in any raceway, compartment, outlet box, junction box, or similar fitting with conductors of electric light, power, Class 1, or nonpower-limited fire alarm circuits.

*Exception No. 1: Where all of the conductors of electric light, power, Class 1, and nonpower-limited fire alarm circuits are separated from all of the conductors of communications circuits by a barrier.*

*Exception No. 2: Power circuit conductors in outlet boxes, junction boxes, or similar fittings or compartments where such conductors are introduced solely for power supply to communications equipment. The power circuit conductors shall be routed within the enclosure to maintain a minimum of 0.25 in. (6.35 mm) separation from the communications circuit conductors.*

222-4

**2. In Shafts.** Communications wires and cables run in the same shaft with conductors of electric light, power, Class 1, or nonpower-limited fire alarm circuits shall be separated from electric light, power, Class 1, and nonpower-limited fire alarm circuit conductors by not less than 2 in. (50.8 mm).

*Exception: Where either (1) all of the conductors of electric light, power, Class 1, and nonpower-limited fire alarm circuits are in a raceway, or in metal-sheathed, metal-clad, nonmetallic-sheathed, or Type UF cables, or (2) all of the conductors of communications circuits are encased in raceway.*

**(2) Other Applications.** Communications wires and cables shall be separated at least 2 in. (50.8 mm) from conductors of any electric light, power, Class 1, and nonpower-limited fire alarm circuits.

*Exception No. 1: Where either (1) all of the conductors of electric light, power, Class 1, and nonpower-limited fire alarm circuits are in a raceway or in metal-sheathed, metal-clad, nonmetallic-sheathed, Type AC, or Type UF cables, or (2) all of the conductors of communications circuits are encased in raceway.*

*Exception No. 2: Where the communications wires and cables are permanently separated from the conductors of electric light, power, Class 1, and nonpower-limited fire alarm circuits by a continuous and firmly fixed nonconductor, such as porcelain tubes or flexible tubing, in addition to the insulation on the wire.*

**(b) Spread of Fire or Products of Combustion.** Installations in hollow spaces, vertical shafts, and ventilation or air-handling ducts shall be so made that the possible spread of fire or products of combustion will not be substantially increased. Openings around penetrations through fire resistance-rated walls, partitions, floors, or ceilings shall be firestopped using approved methods.

**(c) Equipment in Other Space Used for Environmental Air.** Section 300-22(c) shall apply.

**(d) Cable Trays.** Types MPP, MPR, MPG, and MP multipurpose cables and Types CMP, CMR, CMG, and CM communications cables shall be permitted to be installed in cable trays.

**(e) Support of Conductors.** Raceways shall be used for their intended purpose. Communications cables or wires shall not be strapped, taped, or attached by any means to the exterior of any conduit or raceway as a means of support.

**4. Statement of Problem and Substantiation for Proposal:**

Including nonpower-limited fire alarm circuits throughout the section corrects an oversight. Deletion of reference to remote control equipment is appropriate since remote control equipment is outside the scope of the article 800. Exception No. 2 to 800-52 (a) (1) c, 1 is revised to permit only power conductors into an enclosure to provide power to a communications circuit since no other nonpower-limited circuit is appropriate. Revision of Exception No 1 to 800-52 (a) (2) permits the two inch separation rule to be waived if communications cables are enclosed in raceway, and thereby corrects an oversight. The remainder of the changes are editorial.

P80052A.DOC

222-5

**5. This Proposal is original material.**

*I hereby grant NFPA the non-exclusive, royalty-free rights, including non-exclusive, royalty-free rights in copyright, in this proposal and I understand that I acquire no rights in any publication of NFPA in which this proposal in this or another similar or analogous form is used.*

Signature (Required)

**PLEASE USE SEPARATE FORM FOR EACH PROPOSAL**

F80052A.DOC

# EXHIBIT 67

FORM FOR PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS

Mail to: Secretary, Standards Council
National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02269-9101
Fax No. 617-770-3500
Note: All proposals must be received by 5:00 p.m. EST/EDST on the published proposal-closing date.

If you need further information on the standards-making process, please contact the Standards Administration Department at 617-984-7249.

Date 5 SEP 96 Name WILLIAM PRIESTLEY Tel. No. 603 764-5504

Company PRIESTLEY LIGHTNING PROTECTION

Street Address 1280 CAPE MOONSHINE ROAD; PIERMONT, NH 03779

Please Indicate Organization Represented (if any) _____

1. a) NFPA Document Title STANDARD FOR THE STORAGE AND HANDLING OF LIQUEFIED PETROLEUM GASES NFPA No. & Year 58 - 1995

b) Section/Paragraph 3-7.1.3

FOR OFFICE USE ONLY
Log # 8
Date Rec'd SEP 09 1996

2. Proposal Recommends: (Check one) ☑ new text ☐ revised text ☐ deleted text

3. Proposal (include proposed new or revised wording, or identification of wording to be deleted):

ADD: THIS PROVISION SHALL NOT PROHIBIT BONDING TO THE LP GAS SYSTEM, AS REQUIRED BY NFPA 780 STANDARD FOR THE INSTALLATION OF LIGHTNING PROTECTION SYSTEMS.

4. Statement of Problem and Substantiation for Proposal: (Note: State the problem that will be resolved by your recommendation; give the specific reason for your proposal including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.) LIGHTNING ROD SYSTEMS HAVE BEEN FOUND TO HAVE THE GAS LINE BONDING CONNECTION REMOVED BY THE GAS SYSTEM INSTALLER. THIS CONNECTION IS REQUIRED BY NFPA 780 SECTIONS 3-17 AND/OR 3-24.2 AND/OR 3-24.3. NFPA 58 SECTION 3-7.1.3 STATES THAT "GROUNDING AND BONDING SHALL NOT BE REQUIRED ON LP-GAS SYSTEMS." THIS PROPOSAL WOULD END THE CONFUSION.

5. ☑ This Proposal is original material. (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought, or research and, to the best of his/her knowledge, is not copied from another source.)

☐ This Proposal is not original material; its source (if known) is as follows: _____

Note 1: Type or print legibly in black ink.
Note 2: If supplementary material (photographs, diagrams, reports, etc.) is included, you may be required to submit sufficient copies for all members and alternates of the technical committee.

*I hereby grant NFPA the non-exclusive, royalty-free rights, including non-exclusive, royalty-free rights in copyright, in this proposal and I understand that I acquire no rights in any publication of NFPA in which this proposal in this or another similar or analogous form is used.*

Willis Priestley
Signature (Required)

PLEASE USE SEPARATE FORM FOR EACH PROPOSAL

# EXHIBIT 68

## Form for Proposals on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 100 - Definitions

OCT 28 1996

SUBMITTER INFORMATION:

First Name: Wayne D. Last Name: Moore, P.E.

Company: MBS Fire Technology, Inc. Telephone#: 770-507-0046

Address 1: 207 Kensington Trace PO Box:

Address 2:

City: Stockbridge State: GA Zip: 30281-6908

Representing: Rockbestos/Surprenant Cable Corporation Country: USA

Please indicate organization represented (if any) Date: 10/14/96

FOR EACH PROPOSAL, PLEASE COMPLETE EACH OF THE FOLLOWING:

1.a)Document Title: National Electrical Code NFPA No.: 70 Year: 1996 #1130

b) Article/Section: 100 - Definitions

2. Proposal recommends: (Check one): ☒ new text ☐ revised text ☐ deleted text.

3. Proposal (include proposed new or revised wording, or identification of wording to be deleted):

Add new definition:

**Circuit Integrity (CI).** A term used to indicate that a cable will maintain its electrical function for a given period of time under specified fire conditions.

4. Statement of Problem and Substantiation for Proposal:

A definition is needed to describe a cable that has been designed to function longer during a fire than standard "fire-resistant" cable and to accommodate technology presently being utilized throughout the world. This definition is needed to compliment companion proposals to CMP 16.

5. ☒ This Proposal is original material.
☐ This Proposal is not original material; its source (if known) is as follows:

## Form for Proposals on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 760-2

OCT 28 1996

SUBMITTER INFORMATION:

First Name: Wayne D. Last Name: Moore, P.E.

Company: MBS Fire Technology, Inc. Telephone#: 770-507-0046

Address 1: 207 Kensington Trace PO Box:

Address 2:

City: Stockbridge State: GA Zip: 30281-6908

Representing: Rockbestos/Surprenant Cable Corporation Country: USA

Please indicate organization represented (if any) Date: 10/14/96

FOR EACH PROPOSAL, PLEASE COMPLETE EACH OF THE FOLLOWING:

#1131

1.a) Document Title: National Electrical Code NFPA No.: 70 Year: 1996

b) Article/Section: 760-2

2. Proposal recommends: (Check one): ☒ new text ☐ revised text ☐ deleted text.

3. Proposal (include proposed new or revised wording, or identification of wording to be deleted):

Add new definition:

**Fire Alarm Circuit Integrity (CI) Cable.** Cable used in fire alarm systems to ensure continued operation of critical circuits during a specified time under fire conditions.

4. Statement of Problem and Substantiation for Proposal:

This definition is used to allow new technology, that is presently being used worldwide, to be used in fire alarm systems. This cable can be used in fire alarm circuits to comply with the survivability requirements of the NFPA 72-1996, *National Fire Alarm Code* with the added benefit of the cable's ability to maintain its electrical function during fire conditions for a defined period of time.

5. ☒ This Proposal is original material.
☐ This Proposal is not original material; its source (if known) is as follows:

## Form for Proposals on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 760-3 (g) New

OCT 28 1996

SUBMITTER INFORMATION:

First Name: Wayne D. Last Name: Moore, P.E.

Company: MBS Fire Technology, Inc. Telephone#: 770-507-0046

Address 1: 207 Kensington Trace PO Box:

Address 2:

City: Stockbridge State: GA Zip: 30281-6908

Representing: Rockbestos/Surprenant Cable Corporation Country: USA

Please indicate organization represented (if any) Date: 10/14/96

FOR EACH PROPOSAL, PLEASE COMPLETE EACH OF THE FOLLOWING:

#1132

1.a) Document Title: National Electrical Code NFPA No.: 70 Year: 1996

b) Article/Section: 760-3 (g) New

2. Proposal recommends: (Check one): ☒ new text ☐ revised text ☐ deleted text.

3. Proposal (Include proposed new or revised wording, or identification of wording to be deleted):

760-3 (g) **Survivability.** See the requirements in the NFPA 72-1996, *National Fire Alarm Code, sub-sections* 3-2.4, 3-4.4, 3-12.4 and 3-12.4.3.

4. Statement of Problem and Substantiation for Proposal:

This section needs to be added to assist those individuals in complying with the survivability requirements of NFPA 72-1996.

5. ☒ This Proposal is original material.
☐ This Proposal is not original material; its source (if known) is as follows:

## Form for Proposals on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 760-31(g)

OCT 28 1996

SUBMITTER INFORMATION:

First Name: Wayne D. Last Name: Moore, P.E.

Company: MBS Fire Technology, Inc. Telephone#: 770-507-0046

Address 1: 207 Kensington Trace PO Box:

Address 2:

City: Stockbridge State: GA Zip: 30281-6908

Representing: Rockbestos/Surprenant Cable Corporation Country: USA

Please indicate organization represented (if any) Date: 10/14/96

FOR EACH PROPOSAL, PLEASE COMPLETE EACH OF THE FOLLOWING:

1.a)Document Title: National Electrical Code NFPA No.: 70 Year: 1996 #1133

b) Article/Section: 760-31(g)

2. Proposal recommends: (Check one): ☒ new text ☐ revised text ☐ deleted text.

3. Proposal (include proposed new or revised wording, or identification of wording to be deleted):

Renumber existing 760-31(g) to 760-31(h).
Add the following words to the end of existing 760-31(g) [renumbered to 760-31(h)]:
"Cables that are listed for circuit integrity shall be permitted to be identified with the suffix CI."

4. Statement of Problem and Substantiation for Proposal:

Where cables are used that provide circuit integrity to meet the requirements of NFPA 72-1996, *National Fire Alarm Code*, they should be marked appropriately. This change allows the marking to be used.

5. ☒ This Proposal is original material.
☐ This Proposal is not original material; its source (if known) is as follows:

Proposal for Submittal to NFPA as of 10/15/96

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Proposals on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 760-31(g) New

OCT 28 1996

SUBMITTER INFORMATION:

First Name: Wayne D. Last Name: Moore, P.E.

Company: MBS Fire Technology, Inc. Telephone#: 770-507-0046

Address 1: 207 Kensington Trace PO Box:

Address 2:

City: Stockbridge State: GA Zip: 30281-6908

Representing: Rockbestos/Surprenant Cable Corporation Country: USA

Please indicate organization represented (if any) Date: 10/14/96

FOR EACH PROPOSAL, PLEASE COMPLETE EACH OF THE FOLLOWING:

1.a) Document Title: National Electrical Code NFPA No.: 70 Year: 1996

#1134

b) Article/Section: 760-31(g) New

2. Proposal recommends: (Check one): ☒ new text ☐ revised text ☐ deleted text.

3. Proposal (include proposed new or revised wording, or identification of wording to be deleted):

Insert a new section 760-31 (g) [renumber the balance of the section]

(g) **Fire Alarm Circuit Integrity (CI) Cable.** Cables suitable for use in fire alarm systems to ensure continued operation of critical circuits during a specified time under fire conditions shall be listed as Circuit Integrity (CI) Cable. Cables identified in sections 760-31(d), (e), and (f) meeting the requirements for Circuit Integrity shall have the additional classification using the suffix "CI" (for example, NPLFPCI, NPLFRCI and NPLFCI).

(FPN) This cable can be used for fire alarm circuits to comply with the survivability requirements of NFPA 72-1996, *National Fire Alarm Code*, that the cable must maintain its electrical function during fire conditions for a defined period of time.

4. Statement of Problem and Substantiation for Proposal:

Cables having circuit integrity are already recognized in NFPA 72-1996, *National Fire Alarm Code* for meeting survivability requirements. New technology has made the use of circuit integrity cables to be practical. Because of this, cables having circuit integrity are presently being used in fire alarm systems worldwide.

5. ☒ This Proposal is original material.
☐ This Proposal is not original material; its source (if known) is as follows:

## Form for Proposals on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 760-71 (g) New

OCT 28 1996

SUBMITTER INFORMATION:

First Name: Wayne D. Last Name: Moore, P.E.

Company: MBS Fire Technology, Inc. Telephone#: 770-507-0046

Address 1: 207 Kensington Trace PO Box:

Address 2:

City: Stockbridge State: GA Zip: 30281-6908

Representing: Rockbestos/Surprenant Cable Corporation Country: USA

Please indicate organization represented (if any) Date: 10/14/96

FOR EACH PROPOSAL, PLEASE COMPLETE EACH OF THE FOLLOWING:

1.a) Document Title: **National Electrical Code** NFPA No.: 70 Year: 1996

#1135

b) Article/Section: 760-71 (g) New

2. Proposal recommends: (Check one): ☒ new text ☐ revised text ☐ deleted text.

3. Proposal (include proposed new or revised wording, or identification of wording to be deleted):

Insert a new section 760-71 (g) [renumber the balance the of section]

(g) Fire **Alarm Circuit Integrity (CI) Cable.** Cables suitable for use in fire alarm systems to ensure continued operation of critical circuits during a specified time under fire conditions shall be listed as Circuit Integrity (CI) Cable. Cables identified in sections 760-71(d), (e), and (f) meeting the requirements for Circuit Integrity shall have the additional classification using the suffix "CI" (for example, FPLPCI, FPLRCI and FPLCI).

(FPN) This cable can be used for fire alarm circuits to comply with the survivability requirements of NFPA 72-1996, *National Fire Alarm Code* that the cable must maintain its electrical function during fire conditions for a defined period of time.

4. Statement of Problem and Substantiation for Proposal:

Cables having circuit integrity are already recognized in NFPA 72-1996, *National Fire Alarm Code* for meeting survivability requirements. New technology has made the use of circuit integrity cables to be practical. Because of this, cables having circuit integrity are presently being used in fire alarm systems worldwide.

5. ☒ This Proposal is original material.
☐ This Proposal is not original material; its source (if known) is as follows:

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## Form for Proposals on NFPA National Electrical Code

OCT 28 1996

NFPA Document and Reference: NFPA 70 760-71(h)

SUBMITTER INFORMATION:

First Name: Wayne D. Last Name: Moore, P.E.

Company: MBS Fire Technology, Inc. Telephone#: 770-507-0046

Address 1: 207 Kensington Trace PO Box:

Address 2:

City: Stockbridge State: GA Zip: 30281-6908

Representing: Rockbestos/Surprenant Cable Corporation Country: USA

Please indicate organization represented (if any) Date: 10/14/96

FOR EACH PROPOSAL, PLEASE COMPLETE EACH OF THE FOLLOWING:

1.a)Document Title: National Electrical Code NFPA No.: 70 Year: 1996 #1136

b) Article/Section: 760-71(h)

2. Proposal recommends: (Check one): ☒ new text ☐ revised text ☐ deleted text.

3. Proposal (include proposed new or revised wording, or identification of wording to be deleted):

Renumber existing 760-71(h) to 760-71(i).
Add the following words to the end of existing 760-71(h) [renumbered to 760-31(h)]:
"Cables that are listed for circuit integrity shall be permitted to be identified with the suffix CI."

4. Statement of Problem and Substantiation for Proposal:

Where cables are used that provide circuit integrity to meet the requirements of NFPA 72-1996, *National Fire Alarm Code*, they should be marked appropriately. This change allows the marking to be used.

5. ☒ This Proposal is original material.
☐ This Proposal is not original material; its source (if known) is as follows:

Proposal for Submittal to NFPA as of 10/15/96

ADS007557

## Form for Proposals on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 Table 760-31(g)

OCT 28 1996

SUBMITTER INFORMATION:

First Name: Wayne D. Last Name: Moore, P.E.

Company: MBS Fire Technology, Inc. Telephone#: 770-507-0046

Address 1: 207 Kensington Trace PO Box:

Address 2:

City: Stockbridge State: GA Zip: 30281-6908

Representing: Rockbestos/Surprenant Cable Corporation Country: USA

Please indicate organization represented (if any) Date: 10/14/96

FOR EACH PROPOSAL, PLEASE COMPLETE EACH OF THE FOLLOWING:

1.a)Document Title: National Electrical Code NFPA No.: 70 Year: 1996

#1137

b) Article/Section: Table 760-31(g)

2. Proposal recommends: (Check one): ☒ new text ☐ revised text ☐ deleted text.

3. Proposal (Include proposed new or revised wording, or identification of wording to be deleted):

Renumber Table 760-31 (g) to Table 760-31 (h).
Renumber reference to "(g)" in third column to "(h)."
Add to the end of the Table:
Note: Cables identified in the above sections 760-31(d), (e), and (f) meeting the requirements for Circuit Integrity shall have the additional classification using the suffix "CI" (for example, NPLFPCI, NPLFRCI and NPLFCI)

4. Statement of Problem and Substantiation for Proposal:

Where cables are used that provide circuit integrity to meet the requirements of NFPA 72-1996, *National Fire Alarm Code*, they should be marked appropriately. This change allows the marking to be used.

5. ☒ This Proposal is original material.
☐ This Proposal is not original material; its source (if known) is as follows:

Proposal for Submittal to NFPA as of 10/15/96

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE, IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Proposals on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 Table 760-71(h)

OCT 28 1996

SUBMITTER INFORMATION:

First Name: Wayne D. Last Name: Moore, P.E.

Company: MBS Fire Technology, Inc. Telephone#: 770-507-0046

Address 1: 207 Kensington Trace PO Box:

Address 2:

City: Stockbridge State: GA Zip: 30281-6908

Representing: Rockbestos/Surprenant Cable Corporation Country: USA

Please indicate organization represented (if any) Date: 10/14/96

FOR EACH PROPOSAL, PLEASE COMPLETE EACH OF THE FOLLOWING:

#1138

1.a)Document Title: National Electrical Code NFPA No.: 70 Year: 1996

b) Article/Section: Table 760-71(h)

2. Proposal recommends: (Check one): ☒ new text ☐ revised text ☐ deleted text.

3. Proposal (Include proposed new or revised wording, or identification of wording to be deleted):

Renumber Table 760-71(h) to Table 760-71(i).
Renumber reference to "(h)" in third column to "(i)."
Add to the end of the Table:
Note: Cables identified in the above sections 760-71(d), (e), and (f) meeting the requirements for Circuit Integrity shall have the additional classification using the suffix "CI" (for example, FPLPCI, FPLRCI and FPLCI)

4. Statement of Problem and Substantiation for Proposal:

Where cables are used that provide circuit integrity to meet the requirements of NFPA 72-1996, *National Fire Alarm Code*, they should be marked appropriately. This change allows the marking to be used.

5. ☒ This Proposal is original material.
☐ This Proposal is not original material; its source (if known) is as follows:

Proposal for Submittal to NFPA as of 10/15/96

ADS007559

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Formal Transmittal of Proposals to NFPA as of 10/14/96

OCT 28 1996

1138-2

Mail a copy of the transmittal form with your signature. **The registration of your new Proposals cannot be completed until this is received. Include this report with your disk.** Mail to: Secretary, Standards Council, National Fire Protection Association, 1 Batterymarch Park Quincy, MA 02269-9101

| Last Name | First Name | NFPA No. | / year | Article/Section | |
|---|---|---|---|---|---|
| Moore, P.E. | Wayne D. | 70 | 1996 | 100 - Definitions | #1130 |
| Moore, P.E. | Wayne D. | 70 | 1996 | 760-2 | #1131 |
| Moore, P.E. | Wayne D. | 70 | 1996 | 760-3 (g) New | #1132 |
| Moore, P.E. | Wayne D. | 70 | 1996 | 760-31(g) | #1133 |
| Moore, P.E. | Wayne D. | 70 | 1996 | 760-31(g) New | #1134 |
| Moore, P.E. | Wayne D. | 70 | 1996 | 760-71 (g) New | #1135 |
| Moore, P.E. | Wayne D. | 70 | 1996 | 760-71(h) | #1136 |
| Moore, P.E. | Wayne D. | 70 | 1996 | Table 760-31(g) | #1137 |
| Moore, P.E. | Wayne D. | 70 | 1996 | Table 760-71(h) | #1138 |

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770-507-0046
Telephone Number

Signature (Required)

# EXHIBIT 69

Print

## Form for Proposals on NFPA National Electrical Code

From Dist

NFPA Document and Reference: NFPA 70 Section 200-7 and Exceptions No. 1, No. 2, No. 3, and No. 4

**SUBMITTER INFORMATION:**

First Name: Ravindra
Last Name: Ganatra
Company: Alcan Cable
Telephone#: (770) 392-2311 # 3982-1
Address 1: Three Ravinia Dr.
PO Box:
Address 2: Suite 1600
City: Atlanta
State: GA Zip: 30092
Representing: Self
Country: USA
Please indicate organization represented (if any)
Date: 11/7/96

**FOR EACH PROPOSAL, PLEASE COMPLETE EACH OF THE FOLLOWING:**

1.a) Document Title:

National Electrical Code NFPA No.: 70 Year: 1996

b) Article/Section: Section 200-7 and Exceptions No. 1, No. 2, No. 3, and No. 4

2. Proposal recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

3. Proposal (Include proposed new or revised wording, or identification of wording to be deleted):

Rewrite Section 200-7 and the Exceptions No. 1, No. 2, No. 3, and No. 4 as shown below (Strikeout is used for deleted text and the new text is underlined) :

200-7. Use of White ~~or Natural Gray~~ Color.

A continuous white ~~or natural gray~~ covering or three continuous white stripes on a conductor or a termination marking of white ~~or natural gray~~ color shall be used only for the grounded conductor.

Exception No. 1: An insulated conductor with a white ~~or natural gray finish~~ covering or thee continuous white stripes shall be permitted as an ungrounded conductor where permanently re-identified to indicate its use, by painting or other effective means at its termination, and at each location where the conductor is visible and accessible.

Exception No. 2: A cable containing an insulated conductor with a white ~~or natural gray outer finish~~ covering or three continuous white stripes shall be permitted for single-pole, 3-way, or 4-way switch loops where the ~~white or natural gray~~ conductor with white covering or three continuous white stripes is used for the supply to the switch, but not as a return conductor from the switch to the switched outlet. In these applications, re-identification of the ~~white or natural gray~~ conductor with white covering or three continuous white stripes shall not be required.

Exception No. 3: A flexible cord for connecting an appliance, having one conductor identified by a white ~~or natural gray outer finish~~ covering or three continuous white stripes or by any other means permitted by Section 400-22, shall be permitted whether or not the outlet to which it is connected is supplied by a circuit having a grounded conductor.

Exception No. 4: A ~~white or natural gray~~ conductor with white covering or three continuous white stripes of circuits of less than 50 volts shall be required to be grounded only as required by Section 250-5(a).

4. Statement of Problem and Substantiation for Proposal:

Stripes, either extruded with insulation or painted over the insulation, are used effectively to identify conductors. Typically a single stripe is used to identify the ungrounded conductors. Three yellow stripes are used to identify the grounded conductors of Type USE that are used by the utilities. The proposal maintains the white color but, seeks to add an option for stripes.

By eliminating "natural gray" the proposal supports the efforts made by the NEC Task Group on this issue.

5. ☒ This Proposal is original material.
☐ This Proposal is not original material; its source (if known) is as follows:

**Formal Transmittal of Proposals to NFPA as of 11/7/96**

Mail a copy of the transmittal form with your signature. **The registration of your new Proposals cannot be completed until this is received. Include this report with your disk.**
Mail to: Secretary, Standards Council, National Fire Protection Association, 1 Batterymarch Park
Quincy, MA 02269-9101

3982-2

| Last Name | First Name | NFPA No. / year | | Article/Section |
|---|---|---|---|---|
| Ganatra<br>Self | Ravindra | 70 | 1996 | Section 200-7 and Exceptions No. 1, No. 2, No. 3, and No. 4 |

NOV 0 8 1996

*I hereby grant NFPA the non-exclusive, royalty-free rights, including non-exclusive, royalty-free rights in copyright, in the proposals described above, complete copies of which have been transmitted to NFPA via electronic file, and I understand that I acquire no rights in any publication of NFPA in which these proposals in this or another similar or analogous form are used.*

(770) 392-2311
Telephone Number

Ravi Ganatra
Signature (Required)

ADS002335

# EXHIBIT 70

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE IT IS DUE TO THE QUALITY

EXHIBIT 1255 4-1-15

PENGAD 800-631-6989

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 100

SUBMITTER INFORMATION:

First Name: Jim
Last Name: Pauley
Company: Square D Company
Telephone#: 606-245-7923
Address 1: 220 Lexington Green Circle
PO Box:
Address 2: Suite 300
City: Lexington
State: KY Zip: 40503
Representing:
Country: USA
Please indicate organization represented (if any)
Date: 9/15/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a) Document Title: National Electrical Code NFPA No.: 70 Year: 1996
   b) Article/Section: 100 Comment on proposal number: 1-134 2756
2. Comment recommends: (Check one): ☐ new text ☐ revised text ☒ deleted text.
3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

Continue to accept the proposal.

4. Statement of Problem and Substantiation for Comment:

This change is critical to clearing up confusion regarding what constitutes service conductors. These conductors should extend from a service point and not from an "other source of power". Although not intended by CMP 1 in the 1996 cycle, the addition of the words "other source of power" to the 1996 Code has led to many interpretations of service conductors that in reality were feeders within the premises wiring system. The deletion of this text will clear up much of this confusion and make it clear as to what rules apply.

5. ☒ This Comment is original material.
   ☐ This Comment is not original material; its source (if known) is as follows:

(T)

Comment for Submittal to NFPA as of 10/31/97

# EXHIBIT 71

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE, IT IS DUE TO THE QUALITY OF THE DOCUMENT.

EXHIBIT 1256 4-1-15

PENGAD 800-631-6989

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 210-11 (New)

SUBMITTER INFORMATION:

First Name: Roger
Last Name: Witt
Company: State Farm Insurance
Telephone#: 309 766 5945
Address 1: 1 State Farm Plaza
PO Box:
Address 2:
City: Bloomington
State: Il Zip: 61710
Representing:
Country: USA
Please indicate organization represented (if any)
Date: 10/21/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a) Document Title: National Electrical Code NFPA No.: 70 Year: 1996

OCT 24 1997

b) Article/Section: 210-11 (New) Comment on proposal number: 2-129

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

2849

3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

We recommend the Arc-Fault Circuit-Interrupter Protection proposal as amended by the panel be accepted.

4. Statement of Problem and Substantiation for Comment:

Our research leads us to the conclusion that arcing faults are the cause of a high percentage of electrical fires. The AFCI technology addresses the problem.

CPSC has had testing done by UL and UL has done subsequent testing that demonstrates that AFCIs will address many of the fires from arcing faults in residential occupancies.

New homes will become older homes eventually and arcing faults fires seem to occur in older homes due to misuse, improper changes, or additions,or other damage to electrical equipment or appliances. As residential occupancies age, the need for this type of protection increases as changes are made to the electrical system.

5. ☒ This Comment is original material.
☐ This Comment is not original material; its source (if known) is as follows:

Comment for Submittal to NFPA as of 10/23/97

ADS000175

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 210-7(d)(3)

**SUBMITTER INFORMATION:**

First Name: Roger | Last Name: Witt
Company: State Farm Insurance | Telephone#: 309 766 5945
Address 1: 1 State Farm Plaza | PO Box:
Address 2:
City: Bloomington | State: Il | Zip: 61710
Representing: | Country: USA
Please indicate organization represented (if any) | Date: 10/21/97

2850
OCT 24 1997

**FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:**

1. a) Document Title: **National Electrical Code** NFPA No.: **70** Year: **1996**
   b) Article/Section: 210-7(d)(3) Comment on proposal number: 2-42
2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.
3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

(3) Where a grounding means does not exist in the receptacle enclosure, a nongrounding-type receptacle(s) shall be permitted to be replaced with anothr nongrounding-tpe receptacle(s).~~the installaton shall comply with a,b, or c below:~~

~~a. NO Change~~

~~b. A non grounding-type receptacle(s) shall be permitted to be replaced with a ground-fault circuit-interrupter-type of receptacle(s). These receptacles shall be marked "No Equipment Ground." An equipment grounding conductor shall not be connected from the ground-fault circuit-interrupter-type receptacle to any outlet supplied from the ground-fault circuit-interrupter receptacle~~

~~c. A nongrounding-type receptacle(s) shall be permitted to be replaced with a grounding-type receptacle(s) where supplied through a ground-fault-curcuit-interupter. Brounding-type receptacles supplied through the ground-faul circuit-interrupter shall be marked "GFCI Protected" and "No Equipment Ground." An equipment grudnign conductor shall not be connected between the grounding-type receptacles.~~

4. Statement of Problem and Substantiation for Comment:

With an increase in electronic technology, and the reliance on proper grounding to provide a noise free environment and a path to divert surge energy, replacement of a non-grounding type outlet with a grounding type outlet not matter if it is a GFCI device or not, is not a good practice. As we start to see more electronics in appliances and manufacturers protecting the electronics with surge protective devices (SPDs) the ground path is more and more important. If the chasssis of the equipment is also connected ot the same ground as the SPD, then a shock potential is possible. The installation of a grounding type receptacle provides a false sense of protection for the end user not wise in the theories and safety issues of electricity. The panel should revisit the reason the GFCI was offered as a solution for replacement outlets, consider the needs of today ie power quality and the proper operation of surge protective devices. SPDs are not only used on computers, and television sets, they are used for microwave ovens, security systems, garage door operators etc. all types of SPDs (with one exception) require a good low impedance ground path for proper operation.

5. ☒ This Comment is original material.
   ☐ This Comment is not original material; its source (if known) is as follows:

Comment for Submittal to NFPA as of 10/23/97

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 250

SUBMITTER INFORMATION:

First Name: Roger Last Name: Witt

Company: State Farm Insurance Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza PO Box:

Address 2:

City: Bloomington State: Il Zip: 61710

Representing: Country: USA

Please indicate organization represented (if any) Date: 10/21/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

2851-1

1. a)Document Title: National Electrical Code NFPA No.: 70 Year: 1996

OCT 24 1997

b) Article/Section: 250 Comment on proposal number: 5-41

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

250-64 Resistance of Made Electrodes. A single electrode consisting of a rod, pipe, or plate that does not have a resistance to ground of 25 ohms or less shall be augmented by one additional electrode or any of the types specified in Section 250-60 or 250-62. Where multiple rod, pipe, or plate electrodes are installed to meet the requirements of this section, they shall not be less than 16 ft. (4.9m) ~~6 ft. (1.83m)~~ apart.

250-78. Connections to Electrodes. The grounding conductor shall be connected to the grounding electrode by exothermic welding, listed lugs, listed pressure connectors, listed clamps, or other listed means. Connections depending on solder shall not be used. Ground clamps shall be listed for the materials of the grounding electrode and the grounding electrode conductor and, where used on pipe, rod, or other buried electrodes shall also be listed for direct soil burial. Not more than one conductor shall be connected to the grounding electrode by a single clamp or fitting unless the clamp or fitting is listed for multiple conductors,. One of the methods indicated in (a), (b), or (c), ~~or (d)~~ below shall be used.

a. NO CHANGE

b. NO CHANGE

~~c. Sheet-Metal-Strap Type Ground Clamp. A listed sheet-metal-strap-type ground clamp having a rigid metal base that seats on the electrode and having a strap of such material and dimensions that it is not likely to stretch during or after installation.~~

d. c. Other Means. An equally substantial approved means.

250-130(b) Equipment Grounding Conductor

(b) For Ungrounded System. The connection shall be made by bonding the equipment grounding conductor to the grounding electrodes conductor and to the grounded service conductor.

~~Exception for (a) and (b): For replacement of non-grounding-typed receptacles with grounding type receptacles and for branch-circuit extensions only in existing installations that do not have an equipment grounding conductor in the branch circuit, the grounding or a grounding type receptacle outlet shall be permitted to be grounded to an accessible point on the grounding electrode system as described in 250-60, or to any accessible point on the grounding electrode conductor~~

~~(FPN): See section 210-7(d) for the use of a ground fault circuit -intrrupter-type receptacle~~

4. Statement of Problem and Substantiation for Comment:

250-64 substantiation: Using the table 5, Table 8 and Table 9 in the IEEE green book, it appears that adding and additional rod less than one rod length does not appreciably reduce the resistance. And the

resistance will not be halved unless the additional rods are at least several rod lengths apart. With this information, why not change the distance requirement from 6 feet to 16 feet. The cost of this additional rod, wire and clamp is less than the cost to measure the resistance of a single rod.

250-78 Connections to electrodes: Since there are band clamps that do stretch, why not just delete the allowance totally. If an inspector cannot determine which clamp will stretch and which will not, and there are homes being built that do not have the benefit of the inspection process so maybe the contractor or homeowner does not know which band clamp will or will not stretch, the homeowner suffers in the end and the purpose of the NEC requirements for proper bonding and grounding is negated.

250-130(b) Equipment grounding conductor: Should the equipment grounding conductor run parallel to the phase and neutral, and in the same enclosure or not? When considering the safety issues of the circuit and how that circuit is utilized, is a separate grounding conductor with an unknown distance, routing and impedance safe? Consider the use of surge protective devices. Will the grounding wire be suitable to divert the energy safely to ground or will an alternate path be taken, Since this is an unknown, and safety is the issue, I recommend that where a grounded type receptacle is replacing a non grounded receptacle and there is no grounding conductor in the box, that a new set of circuit wires be installed from the panel to the device wiring that includes the grounding conductor. The FPN note was also struck to eliminate the replacement of non grounded receptacles with grounding receptacles of any type. If a ground is needed by an appliance, whether for safety or proper operation, a non grounded device will not work adequately

2851-2

5. ☒ **This Comment is original material.**
   ☐ **This Comment is not original material; its source (if known) is as follows:**

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 250

SUBMITTER INFORMATION:

First Name: Roger Last Name: Witt

Company: State Farm Insurance Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza PO Box:

Address 2:

City: Bloomington State: Il Zip: 61710

Representing: Country: USA

Please indicate organization represented (if any) Date: 10/22/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a)Document Title: National Electrical Code NFPA No.: 70 Year: 1996 2852-1

b) Article/Section: 250 Comment on proposal number: 5-41A

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text. OCT 24 1997

3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

250-56 Resistance of Made Electrodes. A single electrode consisting of a rod, pipe, or plate that does not have a resistance to ground of 25 ohms or less shall be augmented by one additional electrode or any of the types specified in Section 250-60 or 250-62. Where multiple rod, pipe, or plate electrodes are installed to meet the requirements of this section, they shall not be less than 16 ft. (4.9m) ~~6 ft. (1.83m)~~ apart.

~~(FPN): The parelleling efficiency of rods longer than 8 ft (2.44m) is improved by spacing greater than 6 ft. (1.83m) apart.~~

250-70. Grounding Conductor Connections to Electrodes. The grounding conductor shall be connected to the grounding electrode by exothermic welding, listed lugs, listed pressure connectors, listed clamps, or other listed means. Connections depending on solder shall not be used. Ground clamps shall be listed for the materials of the grounding electrode and the grounding electrode conductor and, where used on pipe, rod, or other buried electrodes shall also be listed for direct soil burial. Not more than one conductor shall be connected to the grounding electrode by a single clamp or fitting unless the clamp or fitting is listed for multiple conductors,. One of the methods indicated in (a), (b), or (c), ~~or (d)~~ below shall be used.

a. NO CHANGE

b. NO CHANGE

~~c. Sheet-Metal-Strap Type Ground Clamp. A listed sheet-metal-strap type ground clamp having a rigid metal base that seats on the electrode and having a strap of such material and dimensions that it is not likely to stretch during or after installation.~~

~~d.~~ c. Other Means. An equally substantial approved means.

250-130(b) Equipment Grounding Conductor

(b) For Ungrounded System. The connection shall be made by bonding the equipment grounding conductor to the grounding electrodes conductor and to the grounded service conductor.

~~Exception for (a) and (b): For replacement of non-grounding-typed receptacles with grounding-type receptacles and for branch-circuit extensions only in existing installations that do not have an equipment grounding conductor in the branch circuit, the grounding or a grounding-type receptacle outlet shall be permitted to be grounded to an accessible point on the grounding electrode system as described in 250-60, or to any accessible point on the grounding electrode conductor~~

~~(FPN): See section 210-7(d) for the use of a ground-fault circuit-interrupter-type receptacle~~

4. Statement of Problem and Substantiation for Comment:

Comment for Submittal to NFPA as of 10/23/97

ADS000179

250-56 Substantiation: Using the table 5, Table 8 and Table 9 in the IEEE green book, it appears that adding and additional rod less than one rod length does not appreciably reduce the resistance. And the resistance will not be halfed unless the additional rods are at least several rod lengths apart. With this information, why not change the distance requirement from 6 feet to 16 feet. The cost of this additional rod, wire and clamp is less than the cost to measure the resistance of a single rod.

250-70 Connections to electrodes: Since there are band clamps that do stretch, why not just delete the allowance totally. If an inspector cannot determine which clamp will stretch and which will not, and there are homes being built that do not have the benefit of the inspection process so maybe the contractor or homeowner does not know which band clamp will or will not stretch, the homeowner suffers in the end and the purpose of the NEC requirements for proper bonding and grounding is negated.

250-130(b) Equipment grounding conductor: Should the equipment grounding conductor run parallel to the phase and neutral, and in the same enclosure or not? When considering the safety issues of the circuit and how that circuit is utilized, is a separate grounding conductor with an unknown distance, routing and impedance safe? Consider the use of surge protective devices. Will the grounding wire be suitable to divert the energy safely to ground or will an alternate path be taken, Since this is an unknown, and safety is the issue, I recommend that where a grounded type receptacle is replacing a non grounded receptacle and there is no grounding conductor in the box, that a new set of circuit wires be installed from the panel to the device wiring that includes the grounding conductor. The FPN note was also struck to eliminate the replacement of non grounded receptacles with grounding receptacles of any type. If a ground is needed by an appliance, whether for safety or proper operation, a non grounded device will not work adequately

25522

5. ☐ This Comment is original material.
☐ This Comment is not original material; its source (if known) is as follows:

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE, IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 250-50 (a)

SUBMITTER INFORMATION:

First Name: Roger Last Name: Witt

Company: State Farm Insurance Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza PO Box:

Address 2:

City: Bloomington State: Il Zip: 61710

Representing: Country: USA

Please indicate organization represented (if any) Date: 10/22/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a) Document Title: National Electrical Code NFPA No.: 70 Year: 1996 2853

b) Article/Section: 250-50 (a) Comment on proposal number: 5-150

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

3. Comment (include proposed new or revised wording, or identification of wording to be deleted): OCT 24 1997

Panel Action Revision:
Delete sub paragraph c1, c2,c4 and c5, and the FPN

4. Statement of Problem and Substantiation for Comment:
Should the equipment grounding conductor run parallel to the phase and neutral, and in the same enclosure or not? When considering the safety issues of the circuit and how that circuit is utilized, is a separate grounding conductor with an unknown distance, routing and impedance safe? Consider the use of surge protective devices. Will the grounding wire be suitable to divert the energy safely to ground or will an alternate path be taken, Since this is an unknown, and safety is the issue, I recommend that where a grounded type receptacle is replacing a non grounded receptacle and there is no grounding conductor in the box, that a new set of circuit wires be installed from the panel to the device wiring that includes the grounding conductor. The FPN note was also struck to eliminate the replacement of non grounded receptacles with grounding receptacles of any type. If a ground is needed by an appliance, whether for safety or proper operation, a non grounded device will not work adequately

5. ☒ This Comment is original material.
☐ This Comment is not original material; its source (if known) is as follows:

(E)

Comment for Submittal to NFPA as of 10/23/97

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE, IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 250-50 (a)

SUBMITTER INFORMATION:

First Name: Roger | Last Name: Witt

Company: State Farm Insurance | Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza | PO Box:

Address 2:

City: Bloomington | State: Il | Zip: 61710

Representing: | Country: USA

Please Indicate organization represented (if any) | Date: 10/22/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a)Document Title: National Electrical Code NFPA No.: 70 Year: 1996 2854

b) Article/Section: 250-50 (a) Comment on proposal number: 5-161

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

3. *Comment (include proposed new or revised wording, or identification of wording to be deleted):*

OCT 2 4 1997

Delete proposed exception in sub paragraph a

(b) For ungrounded System. The connection shall be made by bonding the equipment grounding conductor to the groudning electrode conductor and to the grounded service conductor.

Deletethe exception under sub paragraph b and the FPN

4. Statement of Problem and Substantiation for Comment:

Should the equipment grounding conductor run parallel to the phase and neutral, and in the same enclosure or not? When considering the safety issues of the circuit and how that circuit is utilized, is a separate grounding conductor with an unknown distance, routing and impedance safe? Consider the use of surge protective devices. Will the grounding wire be suitable to divert the energy safely to ground or will an alternate path be taken, Since this is an unknown, and safety is the issue, I recommend that where a grounded type receptacle is replacing a non grounded receptacle and there is no grounding conductor in the box, that a new set of circuit wires be installed from the panel to the device wiring that includes the grounding conductor. The FPN note was also struck to eliminate the replacement of non grounded receptacles with grounding receptacles of any type. If a ground is needed by an appliance, whether for safety or proper operation, a non grounded device will not work adequately

5. ☒ This Comment is original material.
☐ This Comment is not original material; its source (if known) is as follows:

Comment for Submittal to NFPA as of 10/23/97

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 250-50a

SUBMITTER INFORMATION:

First Name: Roger Last Name: Witt

Company: State Farm Insurance Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza PO Box:

Address 2:

City: Bloomington State: Il Zip: 61710

Representing: Country: USA

Please indicate organization represented (if any) Date: 10/22/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a)Document Title: National Electrical Code NFPA No.: 70 Year: 1996 2855

b) Article/Section: 250-50a Comment on proposal number: 5-162

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

Same comments as for comment on proposal 5-161

OCT 24 1997

4. Statement of Problem and Substantiation for Comment:

Should the equipment grounding conductor run parallel to the phase and neutral, and in the same enclosure or not? When considering the safety issues of the circuit and how that circuit is utilized, is a separate grounding conductor with an unknown distance, routing and impedance safe? Consider the use of surge protective devices. Will the grounding wire be suitable to divert the energy safely to ground or will an alternate path be taken. Since this is an unknown, and safety is the issue, I recommend that where a grounded type receptacle is replacing a non grounded receptacle and there is no grounding conductor in the box, that a new set of circuit wires be installed from the panel to the device wiring that includes the grounding conductor. The FPN note was also struck to eliminate the replacement of non grounded receptacles with grounding receptacles of any type. If a ground is needed by an appliance, whether for safety or proper operation, a non grounded device will not work adequately

5. ☒ This Comment is original material.
☐ This Comment is not original material; its source (if known) is as follows:

Comment for Submittal to NFPA as of 10/23/97

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE, IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 250-71 (b)

SUBMITTER INFORMATION:

First Name: Roger | Last Name: Witt

Company: State Farm Insurance | Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza | PO Box:

Address 2:

City: Bloomington | State: Il | Zip: 61710

Representing: | Country: USA

Please indicate organization represented (if any) | Date: 10/23/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a) Document Title: **National Electrical Code** NFPA No.: **70** Year: **1996**

   b) Article/Section: 250-71 (b) Comment on proposal number: 5-189

2856-1

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

Revise as follows:

(b) Bonding to Other Systems. An accessible means external to service equipment enclosures for connecting intersystem bonding and grounding conductors shall be provided at the service by at least one of the following means:

(1) NO CHANGE

(2) NO CHANGE

(3) NO CHANGE

(4) An enclosure containing a grounding bar with 6 positions for #14 - #6 copper conductors. The grounding bar shall be bonded to the grounding electrode with #6 copper conductor. The enclosure shall be mounted below the service entrance revenue metering equipment for the building. The enclosure shall be a cast box with a gasketed coverplate. The marking "INTERSYSTEM BONDING" shall be provided on the enclosure and coverplate.

For the purpose of providing an accessible means for intersystem bonding, the disconnection means at a separate building or structure as permitted in Section 250-23(a), Exception No. 1 shall be considered the service equipment.

4. Statement of Problem and Substantiation for Comment:

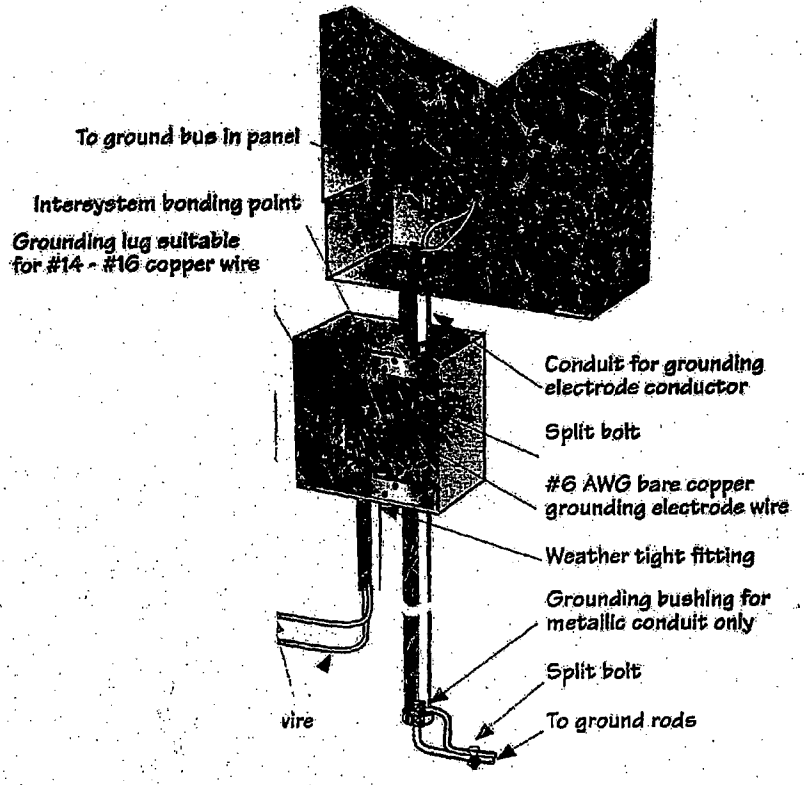
The present code language allows for an opportunity for proper intersystem bonding, however, we have observed that these opportunities are not obvious enough to be utilized. Observation of missing bonding bushings on both ends of metallic conduit and evidence of separate ground rods driven for communication services without bonding to the electrical system grounding electrode, have been made. It is the contention of this writer that if a well marked and accessible intersystem bonding point is established, proper intersystem grounding may be provided. Illustration attached.

5. ☒ This Comment is original material.

   ☐ This Comment is not original material; its source (if known) is as follows:

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE IT IS DUE TO THE QUALITY OF THE DOCUMENT.

2056-2



## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 250-81 (c)

SUBMITTER INFORMATION:

First Name: Roger Last Name: Witt

Company: State Farm Insurance Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza PO Box:

Address 2:

City: Bloomington State: Il Zip: 61710

Representing: Country: USA

Please indicate organization represented (if any) Date: 10/23/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a)Document Title: National Electrical Code NFPA No.: 70 Year: 1996

2857

b) Article/Section: 250-81 (c) Comment on proposal number: 5-241

2. Comment recommends: (Check one): ☒ new text ☐ revised text ☐ deleted text.

OCT 24 1997

3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

c) Concrete Encased Electrode. An electrode encased by at least 2 in. (50.8mm) of concrete, located within and near the bottom of a concrete foundation or footing that is in direct contact with the earth consisting of ~~at least 20 ft. (6.15m) of one or more bare or zinc galvanized or other electrically conductive coated steel reinforcing bars or rods of not less than 1/2" in. (12.7mm) diameter, or consisting or at least~~ 20 ft. (6.1m) of bare copper conductor not smaller than No. 4.

4. Statement of Problem and Substantiation for Comment:

After observing several installations of the UFER grounding method we found that one 20 foot long REBAR was used. The result was that 16 feet of REBAR was encased in the concrete near the bottom with 4 foot used for the vertical portion extending through the foundation wall. Welding two rods together seems to be the only way to ensure a conductive coupling of rebar and that may not be practiced in the field. The code allows the opportunity for using rebar properly, but it seems that the intent is not being met in all cases. The reason believed to be the cause of this misapplication is the standard length the rebar is provided to the builders. The other reason although not considered part of the NEC is the picture offered in the NEC handbook depicting the rebar turned up exiting the foundation wall and the transition to copper wire. In order to mimic the pictorial, less than 20 feet of rebar remains at the bottom of the footing.

5. ☒ This Comment is original material.
☐ This Comment is not original material; its source (if known) is as follows:

Comment for Submittal to NFPA as of 10/23/97

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 250-84

SUBMITTER INFORMATION:

First Name: Roger Last Name: Witt

Company: State Farm Insurance Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza PO Box:

Address 2:

City: Bloomington State: Il Zip: 61710

Representing: Country: USA

Please Indicate organization represented (if any) Date: 10/23/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a) Document Title: National Electrical Code NFPA No.: 70 Year: 1996 2858

b) Article/Section: 250-84 Comment on proposal number: 5-252

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

OCT 24 1997

3. Comment (Include proposed new or revised wording, or identification of wording to be deleted):

250-84. Resistance of Made Electrodes.

When the electrode consisting of a rod, pipe, or plate is used, the electrode shall consist of a minimum of two rods, pipes, or plates spaced 16 ft. (4.8 m) apart and bonded together with #6 bare copper wiring. The connection of the wiring to the electrode shall be made with nonreversible connectors

~~A single electrode consisting of a plate that does not have a resistance to ground of 25 ohms or less shall be augmented by one additional electrode of any of the types specified in Section 250-81 or 250-83. Where multiple rod, pipe or plate electrode is installed to augment the resistance of a plate electrode, they shall not be less than 6 ft. (1.83m) apart.~~

~~(FPN): The paralleling efficiency of rods linger than 8ft. (2.44m) is improved by spacing greater than 6 ft. (1.83m)~~

4. Statement of Problem and Substantiation for Comment:

Technical substantiation is found in the IEEE green book for placement of grounding electrodes. The assumption that requiring the second electrode is meant to reduce the resistance of the electrode system. As I understand the IEEE reference, an electrode installed less than one rod length will not appreciably reduce the resistance. The reference to the nonreversible connectors is to prevent the loosening of the bonding point sometimes found with mechanical connectors that are not maintained.

5. ☒ This Comment is original material.

☐ This Comment is not original material; its source (if known) is as follows:

E

Comment for Submittal to NFPA as of 10/23/97

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE, IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 290 (NEW)

SUBMITTER INFORMATION:

First Name: Roger | Last Name: Witt

Company: State Farm Insurance | Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza | PO Box:

Address 2:

City: Bloomington | State: Il | Zip: 61710

Representing: | Country: USA

Please indicate organization represented (if any) | Date: 10/23/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a)Document Title: National Electrical Code NFPA No.: 70 Year: 1996

2859

b) Article/Section: 290 (NEW) Comment on proposal number: 5-337

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

OCT 24 1997

3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

This is in support of the proposed new article on Surge Protective Devices as listed in the ROP 5-337.

4. Statement of Problem and Substantiation for Comment:

The Panel did not seem to object to the proposed article other than to query the difference between a surge arrestor and a surge protective device, and why a new article was proposed.

1. A surge arrestor is a device that.....
   A surge protective device is a device that.....
2. The reason for a new article was to differentiate between residential occupancies and other types of occupancies. The differences being that in residential occupancies it has been encouraged that all power and communications services to the building enter the building in a relative close proximity, where intersystem bonding can be readily done. In buildings with other types of occupancies you may find antenna systems on the roof where it is impractical to bond to the service entrance grounding electrode, and as noted in article 280 the bonding is to be connected to the nearest building steel. Article 280 appears to relate to equipment most commonly found in non residential occupancies.

5. ☒ This Comment is original material.
   ☐ This Comment is not original material; its source (if known) is as follows:

Comment for Submittal to NFPA as of 10/23/97

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE, IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 410-30 (d)

SUBMITTER INFORMATION:

First Name: Roger | Last Name: Witt

Company: State Farm Insurance | Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza | PO Box:

Address 2:

City: Bloomington | State: Il | Zip: 61710

Representing: | Country: USA

Please indicate organization represented (if any) | Date: 10/23/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a) Document Title: National Electrical Code | NFPA No.: 70 | Year: 1996 2860

b) Article/Section: 410-30 (d) | Comment on proposal number: 18-46

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text. OCT 24 1997

3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

Do not include the proposed 410-30(d) in the National Electrical Code. In essence Delete panel accepted in principle paragraph 410-30(d)

4. Statement of Problem and Substantiation for Comment:

The substantiation for this code change seems to be the ability to easily move lighting fixtures to correspond to modular wall a furnishing changes. Flexible metal conduit or MC assemblies with modular wiring connectors are an accepted practice and conform to the code requirements today. And as commented elsewhere in the code change process, this issue appears to be a design problem and not one of safety. I am concerned with flammability and toxicity of a portable cord above a ceiling and especially if used in a return air plenum ceiling. The issue of unsupported cables, non specified attachment means, and non specified wire sizing is also troublesome. The issue of possible cross talk or EMI with communications systems such as telephone, fire alarm systems, emergency paging systems and the like has not been addressed. Retention or the plug body, or type of connector plug has not been addressed. It appears that all the safety issues will be left up to a listing agency after the code makes an allowance for the system rather than addressing the concerns before the NEC considers it an acceptable wiring method. Realistically the experience found in Canada does not relate in the US, since the issues of connection points, retention of plug and connector, cross talk, toxicity, flammability etc. have not been addressed or have not been necessarily (time) tested prior to submitting this proposal to the NEC.

5. ☒ This Comment is original material.
☐ This Comment is not original material; its source (if known) is as follows:

(E)

Comment for Submittal to NFPA as of 10/23/97

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 800-10 (c)

SUBMITTER INFORMATION:

First Name: Roger | Last Name: Witt

Company: State Farm Insurance | Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza | PO Box:

Address 2:

City: Bloomington | State: Il | Zip: 61710

Representing: | Country: USA

Please indicate organization represented (if any) | Date: 10/22/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a) Document Title: National Electrical Code NFPA No.: 70 Year: 1996 2861

b) Article/Section: 800-10 (c) Comment on proposal number: 16-164

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

OCT 24 1997

3. Comment (Include proposed new or revised wording, or identification of wording to be deleted):

Add new Section 800-10(c) to read as follows:

(c) Point of Entry. The point of entry for communications wiring and cables shall be within 5 feet of the electrical service entry point.

(FPN): The distance to the electrical system, grounding electrode has a direct relationship to the potential difference between the communications circuits and the power circuits.

Exception: Where it is not practicable to install the communications and electrical service in this manner, a separate grounding electrode, installed in compliance with 250-83 (c), shall be installed for the communications systems and the grounding electrodes for the electrical and communications systems shall be connected with a bare or insulated #4 copper conductor. The conductor shall not be exposed to mechanical injury, and when buried, shall be buried to a depth of 24 inches

4. Statement of Problem and Substantiation for Comment:

Change in proposed text as recommended by one of the panel members and shown in the ROP.

By requiring a specific point of entry, the requirement becomes enforceable. Single point grounding for all communications services and power services is needed to provide equal potential between the systems. There is evidence that when communications services are installed remote from the power system service, separate ground rods are installed and not bonded to the electrical service grounding electrode. By specifying a service entrance location adjacent to the power system service entrance a better chance of single point grounding is presented.

5. ☒ This Comment is original material.

☒ This Comment is not original material; its source (if known) is as follows:

Suggested comment from CMP panel member Katz, after review of original Proposal

Comment for Submittal to NFPA as of 10/23/97

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 800-11(c)

SUBMITTER INFORMATION:

First Name: Roger Last Name: Witt

Company: State Farm Insurance Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza PO Box:

Address 2:

City: Bloomington State: Il Zip: 61710

Representing: Country: USA

Please indicate organization represented (if any) Date: 10/23/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a)Document Title: National Electrical Code NFPA No.: 70 Year: 1996 2862

b) Article/Section: 800-11(c) Comment on proposal number: 16-166

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

3. Comment (include proposed new or revised wording, or identification of wording to be deleted): OCT 24 1997

Add new Section 811-10(c) to read as follows:

(c) Point of Entry. The point of entry for communications wiring and cables shall be within 5 feet of the electrical service entry point.

(FPN): The distance to the electrical system, grounding electrode has a direct relationship to the potential difference between the communications circuits and the power circuits.

Exception: Where it is not practicable to install the communications and electrical service in this manner, a separate grounding electrode, installed in compliance with 250-83 (c), shall be installed for the communications systems and the grounding electrodes for the electrical and communications systems shall be connected with a bare or insulated #4 copper conductor. The conductor shall not be exposed to mechanical injury, and when buried, shall be buried to a depth of 24 inches

4. Statement of Problem and Substantiation for Comment:

Change in proposed text as recommended by one of the panel members and shown in the ROP.

By requiring a specific point of entry, the requirement becomes enforceable. Single point grounding for all communications services and power services is needed to provide equal potential between the systems. There is evidence that when communications services are installed remote from the power system service, separate ground rods are installed and not bonded to the electrical service grounding electrode. By specifying a service entrance location adjacent to the power system service entrance a better chance of single point grounding is presented.

5. ☐ This Comment is original material.

☒ This Comment is not original material; its source (if known) is as follows:

Suggested comment from CMP panel member Katz, after review of original Proposal

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE, IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 800-40 (b)

**SUBMITTER INFORMATION:**

First Name: Roger | Last Name: Witt

Company: State Farm Insurance | Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza | PO Box:

Address 2:

City: Bloomington | State: Il | Zip: 61710

Representing: | Country: USA

Please indicate organization represented (if any) | Date: 10/23/97

2863

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a)Document Title: National Electrical Code NFPA No.: 70 Year: 1996

   b) Article/Section: 800-40 (b) Comment on proposal number: 16-172

OCT 24 1997

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

Revise as follows:

(b) Electrode. The grounding conductor shall be connected a follows:

(1) To the nearest accessible location on (1) the building or structure grounding electrode system as covered in Section 250-81 and 250-71 (b), ~~(2) the grounded interior metal water piping system as covered in Section 250-80 (a),~~ (2) the intersystem bonding point as covered in Section 250-71(b) excluding the interior water piping system (3) the power service accessible means external to enclosures as covered in Section 250-71 (b), ~~(4) the metallic power service raceway,~~ (5) the service equipment enclosure, or (6) the grounding electrode conductor or the grounding electrode conductor metal enclosures, or (7) to the grounding electrode conductor or the grounding electrode of a building or structure disconnecting means that is grounded to an electrode as covered in Section 250-24;

4. Statement of Problem and Substantiation for Comment:

Delete the option for bonding to the water piping system because piping systems can be repaired with non conductive parts leaving an ungrounded system. 250-80a makes no conditions about electrical continuity or integrity nor does it require limitations on connection point or location of connection. Add the intersystem grounding point per 250-71b as it is referenced for such a bonding location. Delete the metallic power service raceway because this raceway is not required to be properly bonded to the grounding electrode conductor or electrode. ie the raceway is connected to the meter box and stubbed into the ground, there is no provision to have grounding bushings installed on both ends of that conduit leaving a question does that condition present a low impedance path to ground?. The Panel mentioned a long term history of safe and reliable performance. Consider that todays appliances have more electronic components and operate at lower voltage than in the past, the goal of this proposal is to require bonding at a verifiable location and at a location where the characteristics of the grounding will not change (case of metallic piping) If the connection point for intersystem bonding is required to be at the electrical service entrance point of entry then it may force the point of entry for the cable system to be adjacent to the electrical system and offer the best performance for equal potential between the two services and low impedance paths.

5. ☒ This Comment is original material.
   ☐ This Comment is not original material; its source (if known) is as follows:

Comment for Submittal to NFPA as of 10/23/97

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 810-21(f)

SUBMITTER INFORMATION:

First Name: Roger Last Name: Witt

Company: State Farm Insurance Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza PO Box:

Address 2:

City: Bloomington State: Il Zip: 61710

Representing: Country: USA

Please indicate organization represented (if any) Date: 10/23/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

2864

OCT 24 1997

1. a)Document Title: National Electrical Code NFPA No.: 70 Year: 1996

b) Article/Section: 810-21(f) Comment on proposal number: 16-206

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

Revise as follows:

(b) Electrode. The grounding conductor shall be connected a follows:

(1) To the nearest accessible location on (1) the building or structure grounding electrode system as covered in Section 250-81 and 250-71 (b), ~~(2) the grounded interior metal water piping system as covered in Section 250-80 (a)~~, (2) the intersystem bonding point as covered in Section 250-71(b) excluding the interior water piping system (3) the power service accessible means external to enclosures as covered in Section 250-71 (b), ~~(4) the metallic power service raceway,~~ (5) the service equipment enclosure, or (6) the grounding electrode conductor or the grounding electrode conductor metal enclosures, or (7) to the grounding electrode conductor or the grounding electrode of a building or structure disconnecting means that is grounded to an electrode as covered in Section 250-24;

4. Statement of Problem and Substantiation for Comment:

Delete the option for bonding to the water piping system because piping systems can be repaired with non conductive parts leaving an ungrounded system. 250-80a makes no conditions about electrical continuity or integrity nor does it require limitations on connection point or location of connection. Add the intersystem grounding point per 250-71b as it is referenced for such a bonding location. Delete the metallic power service raceway because this raceway is not required to be properly bonded to the grounding electrode conductor or electrode. ie the raceway is connected to the meter box and stubbed into the ground, there is no provision to have grounding bushings installed on both ends of that conduit leaving a question does that condition present a low impedance path to ground?. The Panel mentioned a long term history of safe and reliable performance. Consider that todays appliances have more electronic components and operate at lower voltage than in the past, the goal of this proposal is to require bonding at a verifiable location and at a location where the characteristics of the grounding will not change (case of metallic piping) If the connection point for intersystem bonding is required to be at the electrical service entrance point of entry then it may force the point of entry for the cable system to be adjacent to the electrical system and offer the best performance for equal potential between the two services and low impedance paths.

5. ☒ This Comment is original material.
☐ This Comment is not original material; its source (if known) is as follows:

Comment for Submittal to NFPA as of 10/23/97

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 810-55

SUBMITTER INFORMATION:

First Name: Roger | Last Name: Witt

Company: State Farm Insurance | Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza | PO Box:

Address 2:

City: Bloomington | State: Il | Zip: 61710

Representing: | Country: USA

Please indicate organization represented (if any) | Date: 10/23/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

2865

1. a) Document Title: National Electrical Code | NFPA No.: 70 | Year: 1996

b) Article/Section: 810-55 | Comment on proposal number: 16-208

OCT 24 1997

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

Add the following paragraph to the existing:

The point of entry for communications wiring and cables shall be within 5 feet of the electrical service entry point.

(FPN): The distance to the electrical system, grounding electrode has a direct relationship to the potential difference between the communications circuits and the power circuits.

Exception: Where it is not practicable to install the communications and electrical service in this manner, a separate grounding electrode, installed in compliance with 250-83 (c), shall be installed for the communications systems and the grounding electrodes for the electrical and communications systems shall be connected with a bare or insulated #4 copper conductor. The conductor shall not be exposed to mechanical injury, and when buried, shall be buried to a depth of 24 inches

4. Statement of Problem and Substantiation for Comment:

Change in proposed text as recommended by one of the panel members and shown in the ROP.

By requiring a specific point of entry, the requirement becomes enforceable. Single point grounding for all communications services and power services is needed to provide equal potential between the systems. There is evidence that when communications services are installed remote from the power system service, separate ground rods are installed and not bonded to the electrical service grounding electrode. By specifying a service entrance location adjacent to the power system service entrance a better chance of single point grounding is presented.

5. ☐ This Comment is original material.

☒ This Comment is not original material; its source (if known) is as follows:

CMP member Katz in suggested wording of the original proposal

Comment for Submittal to NFPA as of 10/23/97

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 820-11(c)

SUBMITTER INFORMATION:

First Name: Roger | Last Name: Witt

Company: State Farm Insurance | Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza | PO Box:

Address 2:

City: Bloomington | State: Il | Zip: 61710

Representing: | Country: USA

Please indicate organization represented (if any) | Date: 10/23/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a)Document Title: National Electrical Code NFPA No.: 70 Year: 1996 2866

b) Article/Section: 820-11(c) Comment on proposal number: 16-220

OCT 2 4 1997

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

Add new Section 820-11(c) to read as follows:

(c) Point of Entry. The point of entry for communications wiring and cables shall be within 5 feet of the electrical service entry point.

(FPN): The distance to the electrical system, grounding electrode has a direct relationship to the potential difference between the communications circuits and the power circuits.

Exception: Where it is not practicable to install the communications and electrical service in this manner, a separate grounding electrode, installed in compliance with 250-83 (c), shall be installed for the communications systems and the grounding electrodes for the electrical and communications systems shall be connected with a bare or insulated #4 copper conductor. The conductor shall not be exposed to mechanical injury, and when buried, shall be buried to a depth of 24 inches

4. Statement of Problem and Substantiation for Comment:

Change in proposed text as recommended by one of the panel members and shown in the ROP.

By requiring a specific point of entry, the requirement becomes enforceable. Single point grounding for all communications services and power services is needed to provide equal potential between the systems. There is evidence that when communications services are installed remote from the power system service, separate ground rods are installed and not bonded to the electrical service grounding electrode. By specifying a service entrance location adjacent to the power system service entrance a better chance of single point grounding is presented.

5. ☐ This Comment is original material.

☒ This Comment is not original material; its source (if known) is as follows:

Suggested comment from CMP panel member Katz, after review of original Proposal

Comment for Submittal to NFPA as of 10/23/97

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## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 820-40(b)

SUBMITTER INFORMATION:

First Name: Roger | Last Name: Witt

Company: State Farm Insurance | Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza | PO Box:

Address 2:

City: Bloomington | State: Il | Zip: 61710

Representing: | Country: USA

Please Indicate organization represented (if any) | Date: 10/23/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a)Document Title: **National Electrical Code** NFPA No.: 70 Year: 1996

b) Article/Section: 820-40(b) Comment on proposal number: 16-222

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

Revise as follows:

(b) Electrode. The grounding conductor shall be connected a follows:

(1) To the nearest accessible location on (1) the building or structure grounding electrode system as covered in Section 250-81 and 250-71 (b), ~~(2) the grounded interior metal water piping system as covered in Section 250-80 (a)~~, (2) the intersystem bonding point as covered in Section 250-71(b) excluding the interior water piping system (3) the power service accessible means external to enclosures as covered in Section 250-71 (b), ~~(4) the metallic power service raceway,~~ (5) the service equipment enclosure, or (6) the grounding electrode conductor or the grounding electrode conductor metal enclosures, or (7) to the grounding electrode conductor or the grounding electrode of a building or structure disconnecting means that is grounded to an electrode as covered in Section 250-24;

4. Statement of Problem and Substantiation for Comment:

Delete the option for bonding to the water piping system because piping systems can be repaired with non conductive parts leaving an ungrounded system. 250-80a makes no conditions about electrical continuity or integrity nor does it require limitations on connection point or location of connection. Add the intersystem grounding point per 250-71b as it is referenced for such a bonding location. Delete the metallic power service raceway because this raceway is not required to be properly bonded to the grounding electrode conductor or electrode. ie the raceway is connected to the meter box and stubbed into the ground, there is no provision to have grounding bushings installed on both ends of that conduit leaving a question does that condition present a low impedance path to ground?. The Panel mentioned a long term history of safe and reliable performance. Consider that todays appliances have more electronic components and operate at lower voltage than in the past, the goal of this proposal is to require bonding at a verifiable location and at a location where the characteristics of the grounding will not change (case of metallic piping) If the connection point for intersystem bonding is required to be at the electrical service entrance point of entry then it may force the point of entry for the communication system to be adjacent to the electrical system and offer the best performance for equal potential between the two services and low impedance paths.

5. ☒ This Comment is original material.
☐ This Comment is not original material; its source (if known) is as follows:

2867

OCT 24 1997

Comment for Submittal to NFPA as of 10/23/97

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE, IT IS DUE TO THE QUALITY OF THE DOCUMENT.

## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 830

SUBMITTER INFORMATION:

First Name: Roger | Last Name: Witt

Company: State Farm Insurance | Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza | PO Box:

Address 2:

City: Bloomington | State: Il | Zip: 61710

Representing: | Country: USA

Please indicate organization represented (if any) | Date: 10/23/97

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a) Document Title: National Electrical Code | NFPA No.: 70 | Year: 1996

b) Article/Section: 830 | Comment on proposal number: 16-236 2868

2. Comment recommends: (Check one): ☒ new text ☐ revised text ☐ deleted text.

3. Comment (Include proposed new or revised wording, or identification of wording to be deleted): OCT 24 1997

Return the proposed 830 to committee

4. Statement of Problem and Substantiation for Comment:

It is not our intent to prevent new technology from being implemented however the NEC is a safety code and there are a few issues that the proposed article does not seem to address:

1. The communication system carries a voltage exceeding 50 volts which takes it out of the inherently safe category.
2. For electrical services to the building, a main disconnect is required plus a grounding electrode to stabilize the voltage and prevent excess during surge conditions, How will this communications system handle a disconnecting means for the low and medium classes?
3. For Fire Service use the main switch for a building is easily identifiable and cuts of all of the ungrounded conductors supplying the building. If more than one main switch is provided, they are required to be located adjacent to one another and marked main 1 or xx, 2 of xx etc. Also if the disconnect switch for this communications system is not recognizable a hazard may exist for the Fire Service personnel.
4. The main disconnect for the electrical service shall be located in an accessible location, is this the case for the disconnect for the communication system where one is required.
5. What conditions are specified to ensure equal potential between services?
6. What insulation levels are specified, are they consistent with the electrical portions of the NEC?
7. How will it interface with current products on the market such as combination multi port surge protective devices, chassis grounding of electronic components such as computers and television sets?
8. What prevents a back feed condition, is it possible during an electrical power outage that the communication voltage can be inadvertently connected?
9. What provisions are in place to identify phase, neutral and grounding, is and equipment ground used in the wiring system?
10. Where for the telephone industry UL 497A applies for a standard to prevent fires and overheating conditions, what safety standards are in place for this system?
11. There are many uninformed people who are accustomed to working with antenna systems in the home, of course there is not 100 volts available on the wiring system. With the new communication wiring system there is the opportunity for a shock hazard when people are unaware there is voltage available. There is no apparent safeguard against this shock potential.

These are a few concerns that should be addressed before this code proposals is accepted.

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## Form for Comments on NFPA National Electrical Code

NFPA Document and Reference: NFPA 70 90-3

SUBMITTER INFORMATION:

First Name: Roger Last Name: Witt

Company: State Farm Insurance Telephone#: 309 766 5945

Address 1: 1 State Farm Plaza PO Box:

Address 2:

City: Bloomington State: Il Zip: 61710

Representing: Country: USA

Please indicate organization represented (if any) Date: 10/21/97

2869-1

OCT 24 1997

FOR EACH COMMENT, PLEASE COMPLETE EACH OF THE FOLLOWING:

1. a)Document Title: **National Electrical Code** NFPA No.: 70 Year: 1996

b) Article/Section: 90-3 Comment on proposal number: 1-23

2. Comment recommends: (Check one): ☐ new text ☒ revised text ☐ deleted text.

3. Comment (include proposed new or revised wording, or identification of wording to be deleted):

Revise as follows: 90-3. Code Arrangement. This Code is divided into the Introduction and nine chapters. Chapter 1,2,3 and 4 apply generally; Chapters 5, 6, and 7 apply to special occupancies, special equipment, or other special conditions; Chapter 8 applies to communications systems, specifically as it relates to the communications service entrance to the building or structure. These latter chapters supplement or modify the general rules. Chapter 1 through 4 apply except as amended by Chapters 5,6,7 and 8 for the particular conditions.

~~Chapter 8 covers communications systems and is independent of the other chapters except where they are specifically referenced therein~~

4. Statement of Problem and Substantiation for Comment:

Proposed and rejected with "Panel Statement" "The substantiation does not provide technical data to warrant a change to a time tested provision to the NEC" There is a proposed and "accepted" article in chapter 8: Proposed Article 830 - Network-Powered Broadband Communications Systems: that seriously requires the inclusion of Chapter 8 work subject to the first 7 chapters of the NEC. Proposed article 830 references quite a few provisions of the earlier chapters, but modifies grounding provisions, overcurrent provisions, and possibly a few other rules that are important for the safety of the public. By including Chapter 8, Code enforcement can apply to the communications wiring methods. My original comment was based on code enforcement of grounding to prevent electrical hazards, and with the proposed 830 section it appears even more relevant since the system relating to 830 provides voltage and current to the occupancy.

Futher Research: Prior to the annual meeting, check the grounding on your house and your neighbors house, see if you can determine if the Telephone and TV services have a single point ground common to the electrcial service. This represents only data points, the requirement of single point grounding is valid, as it is stated in the NEC, but the "time tested provision" stated by the ROP PANEL, to me, eludes to the thought that single point grounding is indeed practiced. One of the important parts of a code enforcement program is to ensure or promote the safety and welfare of the public. Without enforceable codes, this cannot happen.

5. ☒ This Comment is original material.

☐ This Comment is not original material; its source (if known) is as follows:

Comment for Submittal to NFPA as of 10/23/97

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## Formal Transmittal of Comments to NFPA as of 10/23/97

2869-2

file updated

Mail a copy of the transmittal form with your signature. **The registration of your new Comments cannot be completed until this is received.** Include this report with your disk.
Mail to: Secretary, Standards Council, National Fire Protection Association, 1 Batterymarch Park Quincy, MA 02269-9101

| Last Name | First Name | NFPA No. / year | Article/Section | Comment on prop# | |
|---|---|---|---|---|---|
| Witt | Roger | 70 1996 | | | |
| Witt | Roger | 70 1996 | 210-11 (New) | 2-129 | 2849 |
| Witt | Roger | 70 1996 | 210-7(d)(3) | 2-42 | 2850 |
| Witt | Roger | 70 1996 | 250 | 5-41 | 2851 |
| Witt | Roger | 70 1996 | 250 | 5-41A | 2852 |
| Witt | Roger | 70 1996 | 250-50 (a) | 5-150 | 2853 |
| Witt | Roger | 70 1996 | 250-50 (a) | 5-161 | 2854 |
| Witt | Roger | 70 1996 | 250-50a | 5-162 | 2855 |
| Witt | Roger | 70 1996 | 250-60 | | blank |
| Witt | Roger | 70 1996 | 250-71 (b) | 5-189 | 2856 |
| Witt | Roger | 70 1996 | 250-81 (c) | 5-241 | 2857 |
| Witt | Roger | 70 1996 | 250-84 | 5-252 | 2858 |
| Witt | Roger | 70 1996 | 290 (NEW) | 5-337 | 2859 |
| Witt | Roger | 70 1996 | 410-30 (d) | 18-46 | 2860 |

OCT 24 1997

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309 766 5945
Telephone#

Roger Witt
Signature (Required)

IF THE IMAGE IS LESS CLEAR THAN THIS NOTICE, IT IS DUE TO THE QUALITY OF THE DOCUMENT.

**Formal Transmittal of Comments to NFPA as of 10/23/97**

Mail a copy of the transmittal form with your signature. **The registration of your new Comments cannot be completed until this is received.** Include this report with your disk.
Mail to: Secretary, Standards Council, National Fire Protection Association, 1 Batterymarch Park Quincy, MA 02269-9101

2869-3

| Last Name | First Name | NFPA No. / year | Article/Section | |
|---|---|---|---|---|
| Witt | Roger | 70 1996 | 800-10 (c) Comment on prop# 16-164 | 2861 |
| Witt | Roger | 70 1996 | 800-11(c) Comment on prop# 16-166 | 2862 |
| Witt | Roger | 70 1996 | 800-40 (b) Comment on prop# 16-172 | 2863 |
| Witt | Roger | 70 1996 | 810-21(f) Comment on prop# 16-206 | 2864 |
| Witt | Roger | 70 1996 | 810-55 Comment on prop# 16-208 | 2865 |
| Witt | Roger | 70 1996 | 820-11(c) Comment on prop# 16-220 | 2866 |
| Witt | Roger | 70 1996 | 820-40(b) Comment on prop# 16-222 | 2867 |
| Witt | Roger | 70 1996 | 830 Comment on prop# 16-236 | 2868 |
| Witt | Roger | 70 1996 | 90-3 Comment on prop# 1-23 | 2869 |

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309 766 5945
Telephone#

Roger Witt
Signature (Required)

# EXHIBIT 72

# FORM FOR COMMENTS ON NFPA REPORT ON PROPOSALS
## 1999 Spring Association Technical MEETING
## FINAL DATE FOR RECEIPT OF COMMENTS: 5:00 pm EDST, October 2, 1998

For further information on the standards-making process, please contact the Codes and Standards Administration at 617-984-7249

For technical assistance, please call NFPA at 617-770-3000

FOR OFFICE USE ONLY
Log #: [redacted]9
Date Rec'd:

Please indicate in which format you wish to receive your ROP/ROC ☐ electronic ☐ paper ☐ download
(Note: In choosing the download option you intend to view the ROP/ROC from our Website, no copy will be sent to you.)

Date 9-28-98 Name Donald C. Reinert Tel. No. 316-585-6935

Company Reinert Propane inc.

Street Address 444 8th Ave. City Inman State Ks. Zip 67546

Please Indicate Organization Represented (if any)

1. a) NFPA Document Title LP GAS HANDBOOK 95 EDITION NFPA No. & Year 58 98 Edition
b) Section/Paragraph 3-2.7.5

2. Comment on Proposal No. (from ROP):

3. Comment recommends: (check one) ☐ new text ☒ revised text ☐ deleted text

4. Comment (Include proposed new or revised wording, or identification of wording to be deleted): (Note: Proposed text should be in legislative format: i.e., use underscore to denote wording to be inserted (inserted wording) and strike-through to denote wording to be deleted (deleted wording). see attached copy

5. Statement of Problem and Substantiation for Comment: (Note: State the problem that will be resolved by your recommendation; give the specific reason for your comment including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.) NFPA 58 98 Edition, Section 3-2.7.5, does not address the height of the vent, as it does in the LP GAS HANDBOOK 95 Edition on page 204, Figure 3.14.

6. ☒ This Comment is original material. (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought, or research and, to the best of his/her knowledge, is not copied from another source.)
☐ This Comment is not original material, its source (if known) is as follows:

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Signature (Required) Donald Reinert

PLEASE USE SEPARATE FORM FOR EACH COMMENT - NFPA Fax: (617) 770-3500

Mail to: Secretary, Standards Council, National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269

3-2.7.5 The point of discharge from the required pressure relief device on regulating equipment installed outside of buildings in fixed piping systems shall be located at least 24" aboveground and not less than 3ft (1m) horizontally away from any building opening below the level of such discharge, and not beneath any building unless this space is well ventilated to the outside and is not enclosed for more than 50 percent of its perimeter. The point of discharge shall also be located not less than 5 ft (1.5m) in any direction away from any source of ignition, openings into direct-vent (sealed combustion system) appliances, or mechanical ventilation air intakes.

# EXHIBIT 73

# FORM FOR COMMENTS ON NFPA REPORT ON PROPOSALS
## 2000 NOVEMBER ASSOCIATION TECHNICAL MEETING
## FINAL DATE FOR RECEIPT OF COMMENTS: 5:00 pm EST, MARCH 31, 2000

For further information on the standards-making process, please contact the Codes and Standards Administration at 617-984-7249

For technical assistance, please call NFPA at 617-770-3000

FOR OFFICE USE ONLY
Log #: 2
Date Rec'd:

Please indicate in which format you wish to receive your ROP/ROC ☐ electronic ☐ paper ☐ download
(Note: In choosing the download option you intend to view the ROP/ROC from our Website; no copy will be sent to you.)

Date 3-14-00 Name Wesley W. Hayes Jr. Tel. No. 863 534-0383

Company Polk County Fire Services Division

Street Address Bld. 250 / suite 1 City Bartow State Fl. Zip 33831

Please Indicate Organization Represented (if any) Florida Fire chiefs Association

1. a) NFPA Document Title _____ NFPA No. & Year 58 - 1998

b) Section/Paragraph See. 3-2.5 / Paragraph 3-2.5.1

2. Comment on Proposal No. (from ROP): 58-107 Log #70

3. Comment recommends: (check one) ☒ new text ☐ revised text ☐ deleted text

4. Comment (include proposed new or revised wording, or identification of wording to be deleted): (Note: Proposed text should be in legislative format: i.e., use underscore to denote wording to be inserted (inserted wording) and strike-through to denote wording to be deleted (deleted wording).

Cylinders shall NOT be permitted on roof tops.

5. Statement of Problem and Substantiation for Comment: (Note: State the problem that will be resolved by your recommendation; give the specific reason for your comment including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.)

Please See Attached.

6. ☒ This Comment is original material. (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought, or research and, to the best of his/her knowledge, is not copied from another source.)

☐ This Comment is not original material, its source (if known) is as follows: _____

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Signature (Required) Wesley W. Hayes

PLEASE USE SEPARATE FORM FOR EACH COMMENT - NFPA Fax: (617) 770-3500

Mail to: Secretary, Standards Council, National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269

Attachment 58-107 Log #70

Installation of propane tanks on roofs, brings on a multifaceted problem for the fire service, starting with the fire ground tactics. Approaching a propane tank is an extremely complex problem, acerbated by the situation being on a roof top. The proper compliment of manpower, equipment and water capacity are not the only concerns facing this sort of issue. Rescue, interior attack, and time are of extreme importance. Locating permanent tanks on roofs will have a direct adverse effect on all the issues mentioned. The proper strategy of firefighters will be immensely changed.

The speed required to set up elevated platforms and ladders for an attack on a roof top installation promotes recklessness. Valuable time is wasted, while the fire service is setting up equipment. The fire service is dedicated to responding to all types of dangers. However, placing firefighters on a roof, with no escape route is against everything learned in Hazardous Materials Training.

Propane is heavier than air. The approach of the fire service will obviously be lower than what the tank is. Firefighters will be required to go through the hazard to get to the problem. (Once again, this is against everything learned in Hazardous Materials Training. There is no viable approach to a leaking tank on a roof.

In researching the NFPA guidelines, I could not find one document that spoke to propane leaks or fires located on roofs. I take this to mean that no information is together that the fire service can use to attack a tank located on a roof. Tactics have been written, researched, and papers written on above ground tanks, underground tanks and even tanker trucks. Nothing addresses the issue of an attack on roof top installations. Having no measure to go by, gives the fire service nothing to turn to for information. The lack of information alone nullifies the use of LP storage tanks on roof tops.

A propane tank on fire on a roof top, is a situation that no fire department wishes to contend with. Firefighters have the commitment of rescue in buildings. That commitment will be shortened due to the grave danger of the firemen and equipment. An interior attack would be accessed on minute by minute situation. Having a BLEVE over the heads of emergency responders would be a nightmare.

The incident of having to rescue firefighters on a roof that have been hurt during a BLEVE would be to the point of being totally unmanageable to handle. The involvement would introduce risks beyond what any firefighter should face.

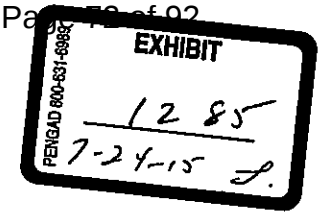
3-14-2000
Wesley W. Haight

# EXHIBIT 74
# (FILED UNDER SEAL)

# EXHIBIT 75
# (FILED UNDER SEAL)

# EXHIBIT 76
# (FILED UNDER SEAL)

# EXHIBIT 77




Approved 28 April 1999

# INTELLECTUAL PROPERTY POLICY OF ASTM

## I. INTRODUCTION.

A. Section 1 of the ASTM Charter states in part: "The corporation is formed for the development of standards on characteristics and performance of materials, products, systems and services; and the promotion of related knowledge."

B. By-law 4.4 states: "The Board shall delegate to such committees and other groups those powers necessary for the fulfillment of their assigned function."

C. By-law 7.1 states: "The Board of Directors is empowered to promulgate procedures for the development and adoption of voluntary consensus standards ...".

D. The Standing Committee on Publications advises the Board of Directors on the formulation of publications policy. The Committee is responsible for the publications program of the Society except the acceptance for publication of ASTM's standards. "The Committee administers the Society's publications program ..."

E. The Committee on Technical Committee Operations ("COTCO") is responsible for the Regulations Governing ASTM's Technical Committees 18.1, which state: "Documents [including standards and provisional standards], technical papers, reports, minutes, letters to the editor, and related materials should be released for publication only through ASTM's Headquarters."

F. The Committee on Standards is responsible for the manual, "Form and Style for ASTM Standards." Regulation 10.7 of the Regulations Governing ASTM Technical Committees requires the current edition of *Form and Style for ASTM Standards* shall be followed in the writing of standards. Section F of that manual covers policies and procedures governing reference to patents, trademarks, similar marks, and reference to standards of other organizations in ASTM Documents.

## II. TYPES OF INTELLECTUAL PROPERTY.

Intellectual property includes patents, trademarks, copyrights and trade secrets, as defined in various federal and state statutes.

A. Patent. A patent is a property right granted by the government to individuals who invent new and useful inventions. Patents may be granted on any new and useful process, machine, manufactured article, composition of matter, or any new and useful improvements thereof. During a patent's limited term, its owner has the right to exclude others from making, using, selling, offering for sale or importing the patented invention into the United States.

B. Copyright. A copyright is a property right granted to the creators (i.e. authors) of original works which are fixed in a tangible medium of expression and which are independently created and possess some minimal degree of creativity. The exclusive rights provided by a copyright include protection against unauthorized printing, publishing, copying, selling, distributing, and/or performing of the copyrighted work. Copyrighted materials include not only traditional written works but also such things as computer software, electronic files and publications,

internet/website files and publications, multimedia, CD-ROM's, videotapes, audiotapes, and training programs.

C. Trademark. A trademark is either a word, phrase, symbol or design, or combination of words, phrases, symbols or designs, which identifies and distinguishes the source of goods or services from one party from those of others. A service mark is the same as a trademark except it identifies and distinguishes the source of a service rather than a product. Trademark rights may be used to prevent others from using a confusingly similar mark but not to prevent others from making the same goods or from selling them under a non-confusing mark.

## III. PURPOSE OF THIS POLICY.

The purpose of this policy is to specify and protect the interests of ASTM in its intellectual property rights, and to describe the means by which ASTM has addressed protection of its rights and recognition of the intellectual property rights of others. ASTM's intellectual property rights, and the revenue generated by utilization of those rights, enables ASTM to carry out its mission.

All ASTM staff , members, and others as given in IV.B below are expected to comply with this policy.

## IV. SCOPE.

A. This policy applies to any ASTM standard, draft standard, or related document defined in Regulation 2 of the Regulations Governing ASTM Technical Committees, as well as to all other ASTM publications and related property, in all forms (including CD-ROM, software, multimedia, ASTM Internet Web Site, videotapes, audiotapes, and written), such as Special Technical Publications, Manuals, Technical Journals, Proficiency Test Program materials, Professional and

Technical Training materials, and Logos (collectively referred to here as "ASTM Intellectual Property"). (Many of these, as well as other examples of ASTM Intellectual Property, are listed in the ASTM Publications Catalog and related brochures. Logos are specifically covered by the ASTM Logo Policy as adopted by the ASTM Board on 15 October 1998.)

B. This policy applies to all employees, members, officers, directors, participants, and others involved with the development, adoption, publication, and/or distribution of ASTM Intellectual Property.

## V. POLICY.

A. All of ASTM's Intellectual Property rights must be protected, regulated and maintained, no matter how wide the information is distributed in print, electronically, or otherwise.

B. ASTM's owns and maintains the rights to its Intellectual Property.

C. ASTM reserves the right to copyright any of its print, electronic products, databases, audio/visual products and any other subject matter covered by the Copyright Act. This is intended to protect ASTM and its members from unauthorized copying and distribution of ASTM Intellectual Property.

D. By participating in any ASTM technical committee and/or participating in the creation and adoption of ASTM's Intellectual Property, participants and committee members acknowledge that the copyright to such Intellectual Property resides in ASTM. Such participants and committee members agree, if necessary,

to execute any and all documents deemed necessary or appropriate by ASTM to transfer and effectuate ownership of all such rights, including but not limited to copyrights, they may have in ASTM Intellectual Property.

E. All participants in the creation of ASTM Intellectual Property agree to abide by the ASTM Charter, By-laws, Regulations Governing ASTM Technical Committees, and Form and Style for ASTM Standards, as well as this Policy, as may be amended from time to time.

F. Individuals who participate in ASTM technical committees and related activities may, from time to time, where appropriate, be required to sign an agreement acknowledging the transfer of any rights in ASTM Intellectual Property to ASTM. The rights granted to ASTM by this assignment shall belong to ASTM in perpetuity.

G. It is ASTM policy that the copyrights and other intellectual property rights of third parties be respected and not infringed by ASTM or any of its committees, or any employee, member or other person acting on behalf of ASTM.

H. Electronic Networks.

1. The Copyright Act provides copyright protection for certain works fixed in any tangible medium expression, now or later developed, from which they can be perceived, reproduced or otherwise communicated, either directly or with the aid of technology.

2. As more and more sophisticated technology becomes available, it may become increasingly difficult to determine and enforce ownership of ASTM Intellectual Property rights. Therefore, inputting, uploading, downloading, reproducing, or transmitting ASTM Intellectual Property without ASTM's prior written permission is prohibited, with the exception that ASTM is not intending to limit the applicability of the "fair use" doctrine developed under the Copyright Act.

## VI. PROCEDURE.

A. Intellectual Property -- Standards.

1. Standards and related documents developed by ASTM committees are copyrighted by ASTM as a "Work for Hire" as given in the U.S. Copyright Act. When an individual accepts appointment to a committee, the individual may also be asked to acknowledge that copyrights and all rights to all materials produced by ASTM committees are owned by ASTM and that ASTM may register the copyright in its own name.

2. If, in developing a standard or related document, a committee proposes to incorporate material from the copyrighted publication of another organization, the committee should request ASTM staff to obtain written permission from the publisher to reprint the material. Reference to a patented item should be avoided, but the ASTM patent policy (F3 of Form and Style for ASTM Standards) must be complied with. Regulations Governing ASTM Technical Committees, Form and Style for ASTM Standards (including but not limited to F3, F4 and F5), and ASTM staff should be consulted for guidelines if patented items are to be referenced in a standard or document.

3. ASTM standards may currently include copyrighted material reproduced under agreement with the copyright holder. Similarly, ASTM may permit others to reprint its material based on appropriate license agreements.

4. The provision stated in A.3 (above) apply to all forms, including, for example, both hard copy and electronic media.

5. ASTM registers its trademarks and service marks in the United States and in countries around the world. As a condition for membership, members agree that the marks are the property of ASTM at all times.

6. Guidance to committees on protection of ASTM's Intellectual Property rights and avoidance of infringement of the rights of others is provided by the ASTM staff.

B. Intellectual Property Other Than Standards

1. ASTM recognizes different ways to assign intellectual property rights:
   a) When individual authors submit manuscripts for technical papers for publication by ASTM in an ASTM Special Technical Publication or ASTM Technical Journal, the author must sign an agreement whereby ownership of the material is assigned to ASTM. However, if the technical paper was prepared in the course of the author's employment by the U.S., Canadian, or British Governments, ASTM acknowledges that copyright does not exist.

b) When ASTM contracts, subsidizes, or agrees with writers, authors, editors, or others to prepare or otherwise help create ASTM Intellectual Property other than technical papers as given in 1a above, a "Work for Hire" agreement must be signed in which copyright is assigned to ASTM. Copyright shall be granted and assigned exclusively to ASTM, including any and all rights protected by the Copyright Laws of the United States and all other countries as set forth in the respective agreement.

2. When ASTM creates and distributes its Intellectual Property, ASTM may do so in whatever manner it decides. This will not, however, preclude the use of the Intellectual Property by authors and editors as set forth in the applicable agreements given in 1a and 1b above.

3. ASTM will take reasonable precautions to preserve the property rights of an author of a manuscript not accepted for publication by ASTM.

C. Licensing -- ASTM requires any individual or entity who desires to copy, reproduce, market, or distribute any of ASTM's Intellectual Property (e.g. Standards, Draft Standards, Technical Papers, Manuals, Software, Training Course Materials, Logos) to execute an appropriate ASTM License Agreement. Such agreements will normally require, among other things, that licensees not modify the ASTM property and to make appropriate copyright acknowledgments and royalty payments. ASTM has no obligation to execute such agreements.

Adopted by the ASTM Board of Directors, 28 April 1999

# EXHIBIT 78

Originally Approved 28 April 1999

**INTELLECTUAL PROPERTY POLICY OF ASTM INTERNATIONAL ("POLICY")**

**I. INTRODUCTION.** Ownership and use of ASTM's Intellectual Property is vital to the ability of ASTM to fulfill its mission. ASTM owns and maintains the rights to its Intellectual Property; it is the responsibility of ASTM's Board of Directors ("Board"), staff, members, participants and authorized resellers/distributors to protect these valuable assets and ensure that they are used in accordance with this Policy.

**A. Section 1** of the **ASTM Charter** states in part: "The corporation is formed for the development of standards on characteristics and performance of materials, products, systems and services; and the promotion of related knowledge."

**B. ASTM By-law 4.4** states: "The Board shall delegate to such committees and other groups those powers necessary for the fulfillment of their assigned function."

**C. By-law 7.1** states: "The Board of Directors is empowered to promulgate procedures for the development and adoption of voluntary consensus standards ..."

**D.** The Standing Committee on Publications ("COP") advises the Board on the formulation of publications policy. COP is responsible for the publications program of the Society except the acceptance for publication of ASTM's standards. "The Committee administers the Society's publications program ..."

**E.** The Committee on Technical Committee Operations ("COTCO") is responsible for the ***Regulations Governing ASTM's Technical Committees ("Regulations")***, of which ***17.1***, states: "Documents [including standards and provisional standards], technical papers, reports, minutes, letters to the editor, and related materials should be released for publication only through ASTM's Headquarters." ***Regulation 15*** governs the use or reference to a patent in an ASTM standard.

**F.** The Committee on Standards ("COS") is responsible for the manual, ***Form and Style for ASTM Standards ("Form and Style")***. ***Regulation 10.7*** requires the current edition of ***Form and Style*** shall be followed in the writing of standards. ***Section F*** of that manual sets forth policies and procedures governing reference to patents, trademarks, similar marks, and reference to standards of other organizations in ASTM documents.

## II. TYPES OF INTELLECTUAL PROPERTY.

Intellectual property includes patents, trademarks, and copyrights and trade secrets, as defined in various federal and state statutes.

**A. Patent.** A patent is a property right granted by the government to individuals who invent new and useful inventions. Patents may be granted on any new and useful process, machine, manufactured article, composition of matter, or any new and useful improvements thereof. During a patent's limited term, its owner has the right to exclude others from making, using, selling, offering for sale or importing the patented invention into the United States.

**B. Copyright.** A copyright is a property right granted to the creators (i.e. authors) of original works which are fixed in a tangible medium of expression and which are independently created and possess some minimal degree of creativity. The exclusive rights provided by a copyright include protection against unauthorized printing, publishing, copying, selling, distributing, and/or performing of the copyrighted work. Copyrighted materials include not only traditional written works but also such things as computer

software, electronic files and publications, internet/website files and publications, multimedia, CD-ROM's, videotapes, audiotapes, and training programs.

**C. Trademark.** A trademark is either a word, phrase, symbol or design, or combination of words, phrases, symbols or designs, which identifies and distinguishes the source of goods or services from one party from those of others. A service mark is the same as a trademark except it identifies and distinguishes the source of a service rather than a product. Trademark rights may be used to prevent others from using a confusingly similar mark but not to prevent others from making the same goods or from selling them under a non-confusing mark.

## III. PURPOSE OF THIS POLICY.

The purpose of this Policy is to specify and protect the interests of ASTM in its intellectual property rights, and to describe the means by which ASTM has addressed protection of its rights and recognition of the intellectual property rights of others. ASTM's intellectual property rights and revenue generated by utilization of those rights enables ASTM to carry out its mission. All ASTM staff, members and others as given in IV.B, below, are expected to comply with this Policy.

## IV. SCOPE.

**A.** This Policy applies to any ASTM standard, draft standard or related document defined in ***Regulation*** **2** (and any adjuncts to such standard or document), as well as to all other ASTM publications and related intellectual property, in all forms (including CD-ROM, software, multimedia, ASTM Internet Web Site, videotapes, audiotapes, and written), such as Special Technical Publications, Manuals, Technical Journals, Proficiency Test Program materials, Professional and Technical Training materials, as well as use of trademarks, service marks and Logos (collectively referred to here as "ASTM Intellectual Property"). (Many of these, as well as other examples of ASTM Intellectual Property, are listed in the ASTM Publications Catalog and related brochures. Logos are specifically covered by the ***ASTM Logo Policy*** as adopted by the ASTM Board on October 15, 1998.)

**B.** This Policy applies to all employees, members, officers, directors, participants, authorized resellers/distributors and others involved with the development, adoption, publication, use and/or distribution of ASTM Intellectual Property. For purposes of this Policy, "committee" or "technical committee" includes sub-committees and task groups.

**C.** Participants, members and authorized resellers/distributors acknowledge and agree that the adoption, enactment, reference, or incorporation of any of the ASTM Intellectual Property by any government or agency has not and will not effect, transfer, modify or alter the copyrights of the ASTM Intellectual Property in any way.

## V. POLICY.

**A.** All of ASTM's Intellectual Property rights must be protected, regulated and maintained, no matter how wide the information is distributed in print, electronically, or otherwise. Such protection is essential to ASTM's ability to fulfill its mission.

**B.** ASTM's owns and maintains the rights to its Intellectual Property.

**C.** ASTM reserves the right to copyright any of its print, electronic products, databases, audio/visual products and any other subject matter covered by the Copyright Act. This is intended to protect ASTM and its members from unauthorized copying and distribution of ASTM Intellectual Property.

**D.** By participating in any ASTM technical committee and/or participating in the creation, development and/or adoption of ASTM's Intellectual Property, participants and committee members acknowledge that the copyright to such Intellectual Property resides in ASTM. Such participants and committee members agree if requested by ASTM, to execute any and all documents deemed necessary or appropriate by ASTM to transfer and effectuate ownership of all such rights, including but not limited to copyrights, they may possibly have in ASTM Intellectual Property. The rights granted to ASTM by this assignment or transfer shall belong to ASTM in perpetuity.

**E.** All participants, members and staff agree to abide by and follow the requirements of the ASTM Charter, By-laws, ***Logo Policy***, ***Regulations Governing ASTM Technical Committees***, and ***Form and Style for ASTM Standards***, as well as this Policy, as each may be amended from time to time, when creating, developing or utilizing ASTM Intellectual Property.

**F.** It is ASTM policy that the copyrights and other intellectual property rights of third parties be respected and not infringed by ASTM or any of its committees, or any employee, member or other person acting on behalf of ASTM.

**G.** It is ASTM policy that, if at all possible, proprietary and/or patented equipment, apparatus, material or information not be included in a standard. If such inclusion is necessary, **By-law 15** must be complied with.

**H.** ASTM registers its trademarks and service marks in the United States and in countries around the world. As a condition for membership, members agree that the marks are the property of ASTM at all times. Use of the marks is subject to, among other things, ASTM's ***Logo Policy***.

**I. Electronic Networks.**

**1.** The Copyright Act provides copyright protection for certain works fixed in any tangible medium expression, now or later developed, from which they can be perceived, reproduced or otherwise communicated, either directly or with the aid of technology.

**2.** As more and more sophisticated technology becomes available, it may become increasingly difficult to determine and enforce ownership of ASTM Intellectual Property rights. Therefore, inputting, uploading, downloading, reproducing, or transmitting ASTM Intellectual Property without ASTM's prior written permission is prohibited.

## VI. PROCEDURE.

**A. Intellectual Property – Standards.**

**1.** Standards and related documents developed by or for ASTM committees are copyrighted by ASTM as set forth in the U.S. Copyright Act. When an individual or entity joins, volunteers for or accepts appointment to the Society or a committee, the individual or entity, as a condition of membership and participation, expressly acknowledges and agrees that copyrights and all rights to all materials produced by or for ASTM committees are owned by ASTM and that ASTM will register the copyright in its own name.

**2.** If, in developing a standard, other document or adjuncts to such standards or documents, a committee proposes to incorporate material from the copyrighted publication of another organization, the committee should request ASTM staff to obtain written permission from the ~~publisher~~ copyright holder to reprint the material. Reference to a patented item should be avoided if at all possible, but in all cases the **ASTM Patent Policy (By-law 15) and F3 of *Form and Style for ASTM Standards*** must be complied with. ***Regulations Governing ASTM Technical Committees***, ***Form and Style for ASTM Standards*** (including but not limited to **F3, F4** and **F5**), and ASTM staff should be consulted for guidance if patented items or trade/service marks are to be referenced in a standard or document.

**3.** ASTM standards may currently include copyrighted material reproduced under

agreement with the copyright holder. Similarly, ASTM may permit others to reprint its material based on appropriate license agreements. F3 of ***Form and Style*** must be followed when referencing standards of other organizations.

**4.** The provision stated in A.3 (above) applies to all forms of media, including, for example, both hard copy and electronic formats.

**5.** Guidance to committees and members on protection of ASTM's Intellectual Property rights and avoidance of infringement of the rights of others is provided by the ASTM staff.

**6.** Only [an officer] of ASTM can grant permission for the use, copying or distribution of ASTM Intellectual Property by others. Any requests for such permission must be forwarded to ASTM staff for consideration and further action.

**B. Intellectual Property Other Than Standards**

**1.** ASTM recognizes different ways to assign intellectual property rights:

**a)** When individual authors submit manuscripts for technical papers for publication by ASTM in an ASTM Special Technical Publication or ASTM Journal, the author must sign an agreement **(Author Agreement)** whereby ownership of the material is assigned to ASTM. However, if the technical paper was prepared in the course of the author's employment by the U.S., Canadian, or British Governments, ASTM acknowledges that copyright does not exist.

**b)** When ASTM contracts, subsidizes, or agrees with writers, authors, editors, or others to prepare or otherwise help create ASTM Intellectual Property other than technical papers as given in 1a above, a **"Work for Hire" Agreement** must be signed in which copyright is acknowledged to reside in ASTM or will be assigned to ASTM. Copyright shall be granted and/or assigned exclusively to ASTM, including any and all rights protected by the Copyright laws of the United States and all other countries as set forth in the respective agreement.

**2.** When ASTM creates and distributes its Intellectual Property, ASTM may do so in whatever manner it decides. This will not, however, preclude the use of the Intellectual Property by authors and editors as set forth in the applicable agreements described in 1a and 1b above.

**3.** ASTM will take reasonable precautions to preserve the property rights of an author of a manuscript submitted but not accepted for publication by ASTM.

**C. Licensing.** ASTM may, at its sole discretion, assign, license or permit the use by others of its Intellectual Property. ASTM requires any individual or entity who desires to copy, reproduce, market, create a derivative work utilizing or distribute any of ASTM's Intellectual Property (e.g. Standards, Draft Standards, Adjuncts, Technical Papers, Research Reports, Manuals, Software, Training Course Materials, Logos) to execute an appropriate **ASTM License Agreement.** Such agreements will normally require, among other things, that licensees not modify the ASTM Intellectual Property and to make appropriate copyright acknowledgments and royalty payments. ASTM has no obligation to execute such agreements.

**As amended by the ASTM Board of Directors, _____ 2003.**

# EXHIBIT 79

Originally Approved 28 April 1999

# INTELLECTUAL PROPERTY POLICY OF ASTM INTERNATIONAL ("POLICY")

**I. INTRODUCTION**. Ownership and use of ASTM International's Intellectual Property (e.g. Standards, Draft Standards, Adjuncts, Certification Programs and related materials, Technical Papers, Research Reports, Manuals, Software, Training Course Materials and Logos collectively referred to as "ASTM IP") are vital to the ability of ASTM International to fulfill its mission. ASTM International owns and maintains the rights to its Intellectual Property; it is the responsibility of ASTM International's Board of Directors ("Board"), staff, members, and others who participate in the creation of ASTM IP (collectively "Participants"), as well as authorized resellers/distributors of ASTM IP, to protect these valuable assets and ensure that they are used in accordance with this Policy.

**A. Section 1** of the **ASTM International Charter** states in part: "The corporation is formed for the development of standards on characteristics and performance of materials, products, systems and services; and the promotion of related knowledge." Section 9 of the Charter also states, in part: "...the Corporation shall not engage in any activity which is not educational, technical, scientific or charitable..."

**B. ASTM International By-law 4.4** states: "The Board shall delegate to such committees and other groups those powers necessary for the fulfillment of their assigned function."

**C. ASTM International By-law 7.1** states: "The Board of Directors is empowered to promulgate procedures for the development and adoption of voluntary consensus standards ..."

**D.** The Standing Committee on Publications ("**COP**") advises the Board on the formulation of publications policy. COP is responsible for all publications programs of the Society except the acceptance for publication of ASTM International's standards.

**E.** The Committee on Technical Committee Operations ("**COTCO**") is responsible for the *Regulations Governing ASTM's Technical Committees* ("**Regulations**"), of which **Regulation 17.1** states: "Documents [including standards and provisional standards], technical papers, reports, minutes, letters to the editor, and related materials should be released for publication only through ASTM's headquarters."

**F. Regulation 10.7** requires that the current edition of the manual, *Form and Style for ASTM Standards* ("**Form & Style**") will be followed in the writing of standards (the Committee on Standards ("**COS**") is responsible for Form & Style). **Section F** of Form & Style sets forth policies and procedures governing, among other matters, reference to patents, trademarks, similar marks, and reference to standards of other organizations, in ASTM International documents. **Regulation 15** governs the use or reference to a patent in an ASTM International standard.

## II. TYPES OF INTELLECTUAL PROPERTY.

Intellectual property includes patents, trademarks and copyrights, as defined in various federal and state statutes.

**A. Patent**. A patent is a property right granted by the government to inventors of new and useful inventions. Patents may be granted on any new and useful process, machine, manufactured article, composition of matter, or any new and useful improvements thereof. During a patent's limited term, its owner has the right to exclude others from making, using, selling, offering for sale or importing the patented invention into the United States.

**B. Copyright**. A copyright is a property right granted to the creators (i.e. authors) of original works that are fixed in a tangible medium of expression and that are independently created and possess some minimal degree of creativity. The exclusive rights provided by a copyright include protection against unauthorized printing, publishing, copying, selling, distributing, and/or performing of the copyrighted work. Copyrighted materials include not only traditional written works but also such things as computer software, electronic files and publications, internet/website files and publications, multimedia, CD-ROMs, DVDs, videotapes, audiotapes, and training programs.

**C. Trademark**. A trademark is a word, phrase, symbol or design, or combination of words, phrases, symbols or designs, which identifies and distinguishes the source of goods or services from one party from those of others. A service mark is the same as a trademark except it identifies and distinguishes the source of a service rather than a product. Trademark rights may be used to prevent others from using a confusingly similar mark but not to prevent others from making the same goods or from selling them under a non-confusing mark.

## III. PURPOSE OF THIS POLICY.

The purpose of this Policy is to specify and protect the interests of ASTM International in its Intellectual Property rights, and to describe the means by which ASTM International has addressed protection of these rights and recognition of the intellectual property rights of others. ASTM International's Intellectual Property rights and revenue generated by utilization of those rights enable ASTM International to carry out its mission. All ASTM International staff, members, and others as stated in IV.B, below, are expected to comply with this Policy.

## IV. SCOPE.

**A.** This Policy applies to any ASTM International standard, draft standard or related document (hereinafter referred to as "ASTM Documents")defined in Regulation 2 of the Regulations Governing ASTM Technical Committees, and any adjuncts to such ASTM Documents, as well as to all other ASTM International publications and related property, in all forms (including CD-ROM, software, multimedia, ASTM Internet Web Site, videotapes, audiotapes) and written materials such as Certification Programs and materials, Special Technical Publications, Manuals, Technical Journals, Proficiency Test Program materials, Professional and Technical Training materials, as well as use of trademarks, service marks, certification marks and Logos (collectively part of ASTM IP). (Many of these, as well as other examples of ASTM IP, are listed in the ASTM International Publications Catalog and related brochures. Logos are specifically covered by the ASTM International Logo Policy as adopted and amended by the Board.)

**B.** This Policy applies to all ASTM International employees, members, officers, directors, Participants, resellers/distributors and others involved with the development, adoption, publication, use and/or distribution of ASTM IP. For purposes of this Policy, "committee" or "technical committee" includes subcommittees and task groups.

**C**. Participants, members, and authorized resellers/distributors acknowledge and agree that the adoption, enactment, reference, or incorporation of any of the ASTM IP by any government or agency has not and will not effect, transfer, modify or alter the copyrights of the ASTM IP in any way.

**V. POLICY.**

**A.** All of ASTM International's Intellectual Property rights must be protected, regulated and maintained, no matter how wide the information is distributed in print, electronically, or otherwise. Such protection is essential to ASTM International's ability to fulfill its mission and maintain its Intellectual Property. The Board of Directors has approved the Principles for the Use of ASTM Intellectual Property by Other Standards Organizations.

**B.** ASTM International owns and maintains the rights to its Intellectual Property.

**C.** ASTM International reserves the right to copyright any of its print, electronic products, databases, audio/visual products and any other subject matter covered by Copyright (pursuant to the US Copyright Act and International Copyright law). This is intended to protect ASTM International and its members from unauthorized copying and distribution of ASTM IP.

**D.** By participating in any ASTM International technical committee and/or participating in the creation, development and/or adoption of ASTM IP, Participants and committee members acknowledge that the copyright to such Intellectual Property resides in ASTM International. Each member agrees, by such participation and enjoyment of his/her annual membership benefits, to have transferred any and all ownership interest, including copyright, they possess or may posses in the ASTM IP to ASTM. If requested by ASTM International, such Participants and committee members agree to execute any and all documents deemed necessary or appropriate by ASTM International to transfer and effectuate ownership of all such rights, including but not limited to copyrights, they may possibly have in ASTM IP. The rights granted to ASTM International by this assignment or transfer shall belong to ASTM International in perpetuity.

**E.** All Participants, members and staff agree to abide by and follow the requirements of the ASTM International Charter, ASTM International By-laws, Regulations Governing ASTM Technical Committees, and Form and Style for ASTM Standards, ASTM International Logo Policy, as well as this Policy, as each may be amended from time to time, when creating, developing or utilizing ASTM IP.

**F.** It is ASTM International's policy, reflected in **Form & Style F5,** that the copyrights and other intellectual property rights of third parties be respected and not infringed by ASTM International or any of its committees, or any employee, member or other person acting on behalf of ASTM International.

**G.** It is ASTM International policy that, if at all possible, proprietary and/or patented equipment, apparatus, material or information not be included in a standard. If such inclusion is necessary, ASTM International's **Patent Policy (Regulation 15)** must be complied with.

**H.** ASTM International registers its trademarks and service marks in the United States and in countries around the world. As a condition of membership, members agree that the marks are the property of ASTM International at all times. Use of the marks is subject to, among other things, ASTM International's Logo Policy.

**I. Electronic Networks.**

**1.** The US Copyright Act (as well as International Copyright law) provides copyright protection for certain works fixed in any tangible medium expression, now or later developed, from which they can be perceived, reproduced or otherwise communicated, either directly or with the aid of technology.

**2.** As more and more sophisticated technology becomes available, it may become increasingly difficult to determine and enforce ownership of ASTM International's Intellectual Property rights; therefore, inputting, uploading, downloading, reproducing, or transmitting ASTM IP without ASTM International's prior permission (or in conformity with ASTM International's applicable License Agreements) is prohibited.

**VI. PROCEDURE.**

**A. Intellectual Property -- Standards.**

**1.** Standards and related documents developed by or for ASTM International committees are copyrighted by ASTM International, as set forth in the U.S. Copyright Act. When an individual or entity joins, volunteers for or accepts appointment to the ASTM International or an ASTM International committee, the individual or entity, as a condition of membership and participation, expressly acknowledges and agrees that copyrights and all rights to all materials produced by or for ASTM International committees are owned by ASTM International and that ASTM International will register the copyright and hold all intellectual property rights in its own name.

**2.** Copyrights and Patents in ASTM Standards. If, in developing an ASTM Document or adjuncts to such ASTM Documents, a committee proposes to incorporate material from the copyrighted publication of another organization, the committee should request ASTM International staff to obtain written permission from the copyright holder to reprint the material. Reference to a patented item should be avoided, if at all possible, but in all cases section **F5 of Form & Style** must be complied with. **Regulation 15** of the *Regulations Governing ASTM Technical Committees*, and *Form and Style for ASTM Standards* (including but not limited to sections **F3** and **F4**), as well as ASTM International staff, should be consulted for guidance if patented items or trade/service marks are to be referenced in an ASTM Document.

**3.** ASTM International standards may currently include copyrighted material reproduced under agreement with the copyright holder. Similarly, ASTM International may permit others to reprint its material based on appropriate license agreements. Section **F5** of Form and Style must be followed when referencing standards of other organizations.

**4.** The provision stated in A.3 (above) applies to all forms of media, including, for example, both hard copy and electronic formats.

**5.** Guidance to committees and members on protection of ASTM IP and avoidance of infringement of the rights of others is provided by the ASTM International staff.

**6.** Permission to Use ASTM IP. Only the President of ASTM International or the Vice President of Publications of ASTM International (in commercial transactions) can grant permission for the use, copying or distribution of ASTM IP by others. Any requests for such permission must be forwarded to ASTM International staff for consideration and further action.

**B. Intellectual Property Other Than Standards**

**1.** ASTM International recognizes different ways to assign intellectual property rights:

**a)** When individual authors submit manuscripts of technical papers for publication by ASTM International, the author must sign an agreement (Author Agreement) whereby ownership of the material is assigned to ASTM International; however, if the technical paper was prepared in the course of the author's employment by the U.S., Canadian, or British Governments, ASTM acknowledges that copyright does not exist.

**b)** When ASTM International contracts, subsidizes, or agrees with writers, authors, editors, or others to prepare or otherwise help create ASTM IP other than technical papers as given in 1a above, a "Work for Hire" Agreement must be signed in which copyright is acknowledged to reside in ASTM International or will be assigned to ASTM International. Copyright shall be granted and/or assigned exclusively to ASTM International, including any and all rights protected by the copyright laws of the United States and all other countries as set forth in the respective agreement.

**2.** When ASTM International creates and distributes ASTM IP, ASTM International may do so in whatever manner it decides. This will not, however, preclude the use of the Intellectual Property by authors and editors as set forth in the applicable agreements described in 1a and 1b above.

**3.** ASTM International will take reasonable precautions to preserve the property rights of an author of a manuscript submitted, but not accepted, for publication by ASTM International.
**C.** Licensing. ASTM International may, at its sole discretion, assign, license or permit the use by others of ASTM IP. ASTM International requires any individual or entity who desires to copy, reproduce, market, create a derivative work utilizing or distribute any of ASTM International's Intellectual Property (e.g. Standards, Draft Standards, Certification Programs and materials, Adjuncts, Technical Papers, Research Reports, Manuals, Software, Training Course Materials, Certification Marks and Logos) to execute an appropriate ASTM License Agreement. Such agreements will normally require, among other things, that licensees not modify the ASTM IP and that they make appropriate copyright acknowledgments and royalty payments. ASTM International has no obligation to execute such agreements.

As amended by the ASTM International Board of Directors, October 28, 2003 and April 13, 2010

# EXHIBIT 80
# (FILED UNDER SEAL)