

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 1

REPORTER'S TRANSCRIPT OF  
NFPA ASSOCIATION TECHNICAL MEETING

Taken at Mandalay Bay Convention Center  
3950 South Las Vegas Boulevard  
Las Vegas, Nevada

On Thursday, June 10, 2010  
8:01 a.m. to 2:28 p.m.

Reported by: Jane V. Efaw, CCR #601, RPR

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

1           Thursday, June 10, 2010; Las Vegas, Nevada

2                           P R O C E E D I N G S

3                           \* \* \* \* \*

4

5                   MR. JARD: Good morning, ladies and  
6 gentlemen. I'm Joe Jard, and I have the distinct  
7 pleasure and privilege of being a member of the NFPA  
8 Standards Council. I now declare that a quorum  
9 exists in convening the 2010 Association Technical  
10 Meeting.

11                   To assist me is Linda Fuller of the NFPA  
12 staff, who is serving as Staff Coordinator. I'd also  
13 like to introduce Amy Beasley Cronin, Secretary to  
14 the Standards Council; Jim Pauley, Chair of the  
15 Council; and Maureen Grodoff, NFPA General Counsel.  
16 This session will be recorded by Depo International,  
17 LLC, Las Vegas, Nevada.

18                   First let me address our safety issues.  
19 Let's take a minute and note the exits from this  
20 room. Now that you have noted the closest exist to  
21 you, I'd like to inform you the fire alarm signal for  
22 the Mandalay Bay Convention Center is a slow whoop  
23 along with flashing strobe lights followed by a voice  
24 announcement.

25                   As with any organization, we have certain

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 3

1 rules and protocols. First, uses of video and/or  
2 audio recording devices of any type are not allowed  
3 during the association technical meeting.

4 I'd like to call your attention to the Guide  
5 for the Conduct of Participants in the NFPA Codes and  
6 Standards Development Process. As a participant in  
7 this process, you should be familiar with this guide.

8 I'd also like to call your attention to the  
9 NFPA Convention Rules, which set the process to be  
10 followed today. Copies of both documents are  
11 contained in the NFPA Codes and Standards Directory,  
12 which is posted on the NFPA website. And copies are  
13 also available at the NFPA registration desk.

14 The certified amending motions that comprise  
15 the agenda for today's session will be taken in the  
16 order as printed in the salmon-colored handout  
17 entitled "Annual 2010 NFPA Association Technical  
18 Meeting Certified Amending Motions."

19 The primary regulations governing the NFPA  
20 Codes and Standards Development Process, including  
21 processing of amending motions at the Association  
22 Technical Meetings, are the regulations governing  
23 committee projects. The regs are also posted on the  
24 NFPA website and published in the NFPA Codes and  
25 Standards Directory.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 4

1           I'd like to say a few words about the  
2 actions that can be taken today and the voting  
3 procedures. At this session you are being asked to  
4 act on certain motions pertaining to Technical  
5 Committee Reports. The Technical Committee Reports  
6 on seven of these documents -- NFPA 18, 45, 53, 214,  
7 276, 409 and 505 -- are contained in the 2009 NFPA  
8 Fall Revision Cycle Report on Proposals and Report on  
9 Comments, the white book.

10           Eight documents, NFPA 25, 58, 86, 96, 204,  
11 303, 502 and 654 can be found in the 2010 NFPA Annual  
12 Revision Cycle Report on Proposals and the Report on  
13 Comments, the blue books.

14           And NFPA 70 can be found in the 2010 NEC  
15 Annual Revision Cycle Report on Proposals and Report  
16 on Comments, the peach book.

17           Under convention rules, before a motion can  
18 be considered for action at this Association  
19 Technical Meeting, the intended maker of the motion  
20 must have filed a notice of intent to make a motion,  
21 NITMAM, prior to the published deadline of April 9th,  
22 2010, and for the National Electrical Code, the  
23 published deadline of May 7th, 2010. These NITMAM's  
24 were reviewed by a Motions Committee appointed by the  
25 Standards Council Chair.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 5

1           The Motions Committee certified those  
2 NITMAM's in compliance with NFPA Rules as certified  
3 amending motions and published the Consolidated  
4 Motions Committee Report, Table A of this report.  
5 The salmon-colored handout identified the certified  
6 amending motions for consideration today.

7           Only certified amending motions together  
8 with certain allowable follow-up motions, that is,  
9 motions that become necessary as a result of  
10 successful certified amending motions, will be  
11 allowed at this meeting.

12           There is a further requirement that a person  
13 must sign in to indicate that they are, in fact, here  
14 to pursue their motion.

15           As part of these procedures, statements for  
16 the record, that is, statements concerning technical  
17 Committee actions for which no certified amending  
18 motion or allowable follow-up motion is available are  
19 not permitted.

20           In accordance with 4.6.10 of the regs, if a  
21 quorum is challenged and found to be no longer  
22 present, a hundred members, the session will be  
23 terminated without further action on the reports.  
24 Any reports on documents that have not been acted on  
25 shall be forwarded directly to the Council without

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 6

1 the recommendation at this meeting for action in  
2 accordance with 4.8 of the regs.

3 If a quorum is lost during the consideration  
4 of a report, any motions to amend or return that  
5 report that have passed prior to the loss of the  
6 quorum will be processed and forwarded to the Council  
7 in accordance with 4.6 and 4.7 of the regs.

8 Any appeal based on action by the  
9 Association at this meeting must be filed with the  
10 Standards Council within 20 days of this meeting,  
11 that is, by June 29th, 2010.

12 Any amendment accepted at this meeting that  
13 fails to pass, the subsequent committee ballot will  
14 automatically be docketed as an appeal on the  
15 Standards Council agenda in accordance with Section  
16 1.6.2(b) of the regs. Note, however, that if an  
17 automatically docketed appeal is not pursued by a  
18 party, the Council need not consider it.

19 The votes cast in this Association Technical  
20 Meeting today and the discussions that lead to the  
21 voting are an integral and important part of the NFPA  
22 consensus process.

23 The Association Technical Meeting is the  
24 forum where the membership considers changes to the  
25 reports prepared by the NFPA Technical Committees

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 7

1 concerning proposed or revised NFPA Codes and  
2 Standards when such changes are pursued by certified  
3 amending motions.

4 Through the motions, debate, and voting at  
5 this meeting, the membership makes recommendations to  
6 the Standards Council. The Standards Council under  
7 NFPA rules is the official issuer of all NFPA Codes  
8 and Standards.

9 The majority vote of the persons present  
10 here today is for the sole purpose of making a  
11 recommendation to the Council on the disposition of  
12 the report.

13 The Standards Council will meet on  
14 August 3rd through 5, 2010, to make a judgment on  
15 whether or not to issue a document. The Council's  
16 decision on document issuance is based on the entire  
17 record before it, including the discussion and vote  
18 taken at this NFPA meeting.

19 Limited review following action by the  
20 Standards Council may also be available through a  
21 petition to the Board of Directors. Any such  
22 petition must be filed within 15 days of the Council  
23 action in accordance with the regulations governing  
24 petitions to the Board of Directors from decisions of  
25 the Standards Council. The deadline notice of such

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 8

1 petition is August 20th, 2010.

2           With respect to voting procedures, the regs  
3 state that voting at NFPA meetings shall be limited  
4 to the following: One, those present who are voting  
5 members of the Association, that is, those with  
6 yellow badges. If you are not a voting member of  
7 record of the Association registered at this meeting,  
8 I ask you to refrain from voting. You need not be a  
9 member of an NFPA section in order to vote. You  
10 must, however, be a voting member.

11           Only voting members of records should be  
12 seated in the front areas. Those seated in the back  
13 areas will not be counted.

14           Voting will be undertaken in the following  
15 manner. There will be no voice votes. The first  
16 vote will be by raising of hands. And if that's not  
17 conclusive, we will proceed to the standing count of  
18 regular voting members.

19           I do want to say at the outset that I will  
20 not cast a vote. Therefore, in the event of a tie  
21 vote, the issue automatically fails.

22           Once a report and certified amending motion  
23 is presented, it is open for discussion. And anyone  
24 in the room has the privilege of participating. The  
25 Chair asks that you preface your remark with your

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 9

1 name, company, or organization affiliation. Let me  
2 repeat that your name and company or organization and  
3 affiliation should precede your remarks.

4           As you can see, we have red and green signs  
5 on the mikes in the room. Red signs indicate  
6 opposition to a motion on the floor. Green signs  
7 indicate support to a motion on the floor. I would  
8 also ask that you stand at the appropriate mike and  
9 state at the beginning of your remarks whether you  
10 are in support of or in opposition to the motion  
11 being debated.

12           Now, a couple of things to note during the  
13 floor debate today. First, please be aware that no  
14 one participating in the floor motions and debate at  
15 this meeting is authorized to act as an agent of or  
16 speak on behalf of the NFPA. And views expressed  
17 during motions and debate, including those expressed  
18 on behalf of NFPA Technical Committees or other  
19 entities operating within the NFPA system, do not  
20 necessarily reflect the views of NFPA.

21           Second, a note about NFPA sections. From  
22 time to time, the Chair or other representative of an  
23 NFPA section may rise during the debate to state the  
24 position of an NFPA section on a motion that is under  
25 consideration. NFPA sections are groups of NFPA

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 10

1 members organized around particular subjects such as  
2 the electrical fire service or healthcare sections.  
3 Under the regulations governing NFPA sections, a  
4 section may take a position on an issue on the floor  
5 of an Association Technical Meeting.

6           The position of a section does not  
7 particularly reflect the views of all section  
8 members. Rather, a section may state a position on a  
9 motion if the majority of section members attending a  
10 section meeting have approved that position and there  
11 are at least 25 votes cast at that section meeting.

12           The position of a section is accorded no  
13 special status in the NFPA Codes and Standards  
14 development process. And just as you would with any  
15 other position expressed during the debates today,  
16 you, as voting members of the association, may weigh  
17 and assess such positions as you deem appropriate.

18           Given the size of the agenda and the amount  
19 of material that we have to get through, we will  
20 start out with 5 minutes per speaker. But it is my  
21 plan to limit the time as appropriate in the event  
22 that this becomes necessary. There will be a timer  
23 that will appear on the middle screen to indicate  
24 that you have one minute remaining on your allotted  
25 time. The Chair reserves the right to hear any new

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 11

1 speaker before yielding the floor to anyone wishing  
2 to address the same issue a second time.

3 Motions that are in order, the certified  
4 amending motions, are contained in the salmon-colored  
5 handout entitled "Annual 2010 NFPA Association  
6 Technical Meeting Certified Amending Motions, which  
7 are available at the registration desk and at the  
8 back of the room today. The motions pertain to the  
9 documents contained on page 72 of the Annual Meeting  
10 Program.

11 As previously stated, this meeting is  
12 conducted in accordance with the NFPA Convention  
13 Rules that are available on the NFPA website, and  
14 there are copies at the NFPA registration desk.

15 Upon completion of all certified amending  
16 motions related to an NFPA document, the presiding  
17 officer shall entertain any follow-up motions. A  
18 follow-up motion is a motion that becomes necessary  
19 as a result of a previous successful amending motion.

20 A motion to return a document or to return a  
21 portion of a document affected by a previous  
22 successful amending motion is always in order as a  
23 follow-up motion as long as it is not repetitious.

24 The presiding officer shall make the  
25 determination on whether a motion is a proper

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 12

1 follow-up motion. The maker of the motion shall be  
2 required to explain why it's a proper follow-up  
3 motion. A follow-up motion shall require  
4 two-seconders.

5           Finally, I would like to stress that the  
6 rules we are operating under today are designed to  
7 improve the efficiency and the quality of the  
8 Association Technical Meeting by eliminating the need  
9 to present uncontested documents.

10           By giving you, the NFPA membership, advanced  
11 notice of the amending motions that are to be  
12 presented and by giving me, as the presiding officer,  
13 greater discretion in managing the debate to ensure  
14 that the issues are as fully debated as possible in  
15 the available time.

16           It is my hope and expectation that together  
17 we will make this Association Technical Meeting a  
18 success. And I thank you in advance for your  
19 cooperation, patience, and when we are done, your  
20 comments and suggestions for the future. Also, we  
21 will be taking comfort breaks as necessary.

22           At this point before we begin with the  
23 documents, I'd like to introduce Jim Pauley, Chair of  
24 the Standards Council, and Amy Beasley Cronin, who  
25 will present the Committee Service Awards.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 13

1           MR. PAULEY: Thanks, Joe. And good morning.  
2           The Committee Service Award is given to a Technical  
3           Committee member for continuous and exemplary service  
4           of one or more committees over a substantial period  
5           of time and in recognition and appreciation of  
6           distinguished service to the NFPA.

7           I'm pleased to present this award today to  
8           the following very deserving individuals. I would  
9           like to first ask Christopher Spencer to join me here  
10          on the podium.

11          MS. CRONIN: Christopher Spencer has been a  
12          member of the Technical Committee on water cooling  
13          towers since 1991 and was appointed Chair in 2000.  
14          He also served on the Exposure Fire Protection  
15          Committee from 1993 to 2002.

16          MR. PAULEY: Please join me in  
17          congratulating Christopher on his service to the NFPA  
18          Codes and Standards process.

19          The next recipient of the Committee Service  
20          Award is James Carpenter. Jim, would you please join  
21          me here on the podium.

22          MS. CRONIN: Jim Carpenter of the  
23          Internation Association of Electrical Inspectors in  
24          Durham, North Carolina, the great state of North  
25          Carolina, currently serves on the Technical

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 14

1 Correlating Committee for the National Electrical  
2 Code since his appointment as Chair in 2002. He's  
3 been a member of the Standards Council since 2007.  
4 In the past he served on the NEC Code-making Panel 2  
5 from 1987 to 2002 and Chair from 1992 to 2010 and the  
6 NEC Code-making Panel 3 from 2002.

7 MR. PAULEY: Thank you, Jim, for your years  
8 of service in the NFPA Codes and Standards making  
9 process. Please give Jim a round of applause.

10 The next recipient of the Committee Service  
11 Award is Wayne Brinkmeyer.

12 MS. CRONIN: Wayne Brinkmeyer of the Britton  
13 Electric Company in Houston, Texas currently serves  
14 on the NEC Code-making Panel 11 since he was  
15 appointed in 2002 as Chair. Wayne was also a member  
16 of the NEC Code-making Panel 18 from 1992, as Chair  
17 from 2002.

18 MR. PAULEY: Please join me in  
19 congratulating Wayne on his service to the NFPA  
20 process.

21 The next recipient of the Committee Service  
22 Award is Julia Burns. Julian, could you please join  
23 me here on the podium.

24 MS. CRONIN: Julian Burns of Quality Tower  
25 Solutions, Incorporated, in Charlotte, North Carolina

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 15

1 currently serves on the NEC Code-making Panel 8 since  
2 he was appointed Chair in 2002 and the Technical  
3 Committee on Electrical Equipment Evaluation since  
4 2008. He previously served on the NEC Code-making  
5 Panel 6 from '93 to 2002, the NEC Code-making Panel 9  
6 from 2002 to 2004, and the Technical Committee on  
7 Electrical Safety in the Workplace from 2002 to 2009.

8 MR. PAULEY: Please join me in  
9 congratulating Julian on his award.

10 The next recipient of the Committee Service  
11 Award is James Daily. Jim, can you join me here on  
12 the podium, please.

13 MS. CRONIN: James Daily from New Jersey is  
14 currently serving on the NEC Code-making Panel 7 from  
15 1987 to present, the NEC Code-making Panel 6 from  
16 2000 to present, the NEC Correlating Committee from  
17 1999 to present. He also served on the Glossary of  
18 Terms Technical Advisory Committee from 2007 to 2009.

19 MR. PAULEY: You guys are catching on. I  
20 don't even have to say it now. Thanks, Jim for your  
21 service to the process.

22 The next recipient of the Committee Service  
23 Award is Don Johnson. Don, could you join me here on the  
24 podium, please.

25 MS. CRONIN: Don Johnson of Interior

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 16

1 Electric, Incorporated, in Pembroke Pines, Florida is  
2 currently serving on the NEC Code-making Panel 17  
3 since he was appointed chair in 2002. He also served  
4 on the NEC Code-making Panel 10 from 1998 to 2002.

5 MR. PAULEY: Thanks, Don, for your service  
6 in the process.

7 The next recipient of the Committee Service  
8 Award is Melvin Sanders. Mel, could you please join  
9 me here at the podium.

10 MS. CRONIN: Melvin Sanders of  
11 (indiscernible) Electrical Company, Incorporated, in  
12 Ankeny, Iowa is currently serving on the Technical  
13 Committee on Electrical Equipment of Industrial  
14 Machinery and has been since 1997. He has previously  
15 served on the NEC Code-making Panel 3 from 1995 to  
16 2010, the Technical Committee on Lightning Protection  
17 from 2004 to 2010, and the Technical Committee on  
18 Electrical Equipment Maintenance from 1997 to 2010.

19 MR. PAULEY: Mel, thanks for your service in  
20 the process as well.

21 The next recipient of the Committee Service  
22 Award is Donald Tonka. Don, would you please join me  
23 here at the podium.

24 MS. CRONIN: Donald Tonka with Underwriters  
25 Laboratories in Belleville, New York is currently

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 17

1 serving on the NEC Code-making Panel 15 since 2002 as  
2 Chair. He previously served on the NEC Code-making  
3 Panel 20 from 1990 to 2002 and also the Standards  
4 Council from 1999 to 2004.

5 MR. PAULEY: Don, thanks for your service in  
6 the process.

7 The next recipient of the Committee Service  
8 Award is Raymond Weber. Ray, would you join me here  
9 at the podium.

10 MS. CRONIN: Raymond Weber of the even  
11 greater state of Wisconsin in Wisconsin Rapids is  
12 currently serving on the NEC Code-making Panel 2  
13 since 2002 as Chair. He previously served on the NEC  
14 Code-making Panel 3 from 1984 to 2002 and was Chair  
15 from 1992 to 2002.

16 MR. PAULEY: It doesn't look like Ray's  
17 here. So please give him a round of applause,  
18 though, for service on the Committee.

19 Our last recipient of the Committee Service  
20 Award could not be here as well, but we will  
21 acknowledge and thank him for his service.

22 MS. CRONIN: Michael Burr of IC in  
23 Palmhurst, Texas is currently on the NEC Code-making  
24 Panel 18 and has been since 1996 and was later  
25 appointed Chair in 2002.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 18

1           MR. PAULEY: On behalf of the Standards  
2 Council, again I would like to say thank you to all  
3 of these individuals for your service in the process.

4           I do have one other announcement. We have  
5 one gentleman in the audience that this will be  
6 his 15th NEC Code cycle. So, Dick Fogerty, I want to  
7 congratulate you for your longtime service in this  
8 process. Dick got a Committee Service Award last  
9 year. But 15 NEC cycles is a lot for anybody to  
10 take. So please give Dick a round of applause for a  
11 really longtime service in this process.

12           This concludes our awards presentation for  
13 this morning. And now we will continue on from  
14 yesterday with the remainder of the documents at the  
15 Association Technical Committee Meeting. So Thank  
16 you.

17           MR. JARD: Thank you, Amy and Jim. The  
18 first report under consideration this morning is that  
19 of the **Technical Committee on Water Additives for**  
20 **Fire Control and Vapor Mitigation**. Here to present  
21 the Committee Report is Committee Chair Armand  
22 Brandeau of FM Approvals in Norwood, Massachusetts.

23           The Committee Report can be found in the  
24 white 2009 Fall Revision Cycle ROP and ROC. The  
25 certified amending motion is contained in the Motions

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 19

1 Committee Report and behind me on the screen. We  
2 will proceed in the order of the motion sequence  
3 number presented. Mr. Brandeau.

4 MR. BRANDEAU: Thank you. Mr. Chairman,  
5 ladies and gentlemen, the Report of the Technical  
6 Committee on Water Additives for Fire Control and  
7 Vapor Mitigation is presented for adoption and can be  
8 found in the Report on Proposals and Report on  
9 Comments for the 2009 Fall Meeting Revision Cycle.

10 The Technical Committee has published a  
11 report consisting of a partial revision of NFPA 18,  
12 Standard on Wetting Agents. The presiding officer  
13 will now proceed with the certified amending motions.

14 MR. JARD: Thank you, Mr. Brandeau. Let's  
15 now proceed with the discussion on the certified  
16 amending motion on NFPA 18. Microphone 1, please.

17 MR. GRINER: My name is Mike Griner. And I  
18 represent Hazard Control Technologies. The motion  
19 here is a grouped motion where if you are voting in  
20 favor of this motion, you are voting to reject  
21 Section 4.5.2.2 and also accept Comment 18-7. And  
22 Comment 18-7 would read --

23 MR. JARD: So your motion is to accept  
24 Comment 18-7 and reject an identifiable part of  
25 Comment 18-4?

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 20

1           MR. GRINER: Yes, sir.

2           MR. JARD: I'm sorry, 18.17. Is it 7 or 17?

3           MR. GRINER: It's to reject Comment 18-4 and  
4 to accept 18-17.

5           MR. JARD: Okay. Thank you. That is the  
6 certified motions. Is there a second? There is a  
7 second. Please proceed.

8           MR. GRINER: Thank you. The issue here --  
9 again let me state I'm Mike Griner, President of  
10 Hazard Control Technologies. I'm a secretary of the  
11 NPA 18 Technical Committee. Our company manufactures  
12 Class-A foams, Class-B foams, and products that are  
13 covered by this standard.

14           This has been a very debated argument within  
15 the Technical Committee. Our Technical Committee is  
16 very small. It consists of 11 people. Four of them  
17 are relatively inactive. And the other seven are  
18 pretty much divided right down the middle on this  
19 issue.

20           The issue is not whether we should perform  
21 aquatic toxicity testing. We all unanimously agree  
22 that aquatic toxicity testing and reporting to the  
23 authorities having jurisdiction is a good thing. The  
24 issue that the manufacturers have with Comment 18-4  
25 is the assigning of an arbitrary 10 milligram per

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 21

1 liter pass/fail criteria, which has no correlation  
2 with the concentration levels the products are  
3 applied in the field.

4           Therefore, having aquatic toxicity results  
5 by voting in favor of this rather than having an  
6 arbitrary 10 milligram per liter value, the aquatic  
7 toxicity values would be reported on the  
8 manufacturer's product data sheets.

9           The scope of the NFPA is the education,  
10 prevention, suppression and protection from fire.  
11 While I myself, along with the NFPA Technical  
12 Committee members, are concerned on the environment,  
13 we are not environmental experts. And the Technical  
14 Committee should not be basically coming up with  
15 pass/fail environmental test limits. It could be in  
16 conflict with EPA requirements. But rather leave the  
17 use and limits to the federal, state, local, EPA's,  
18 and the authority having jurisdiction. So by voting  
19 in favor of this amendment, that's essentially what  
20 would be accomplished.

21           The issue, as I mentioned, is a ten  
22 milligram per liter value as an arbitrary value. So  
23 let me relate it to the products applied in the  
24 field. Every fire suppression agent under this  
25 standard will be UL listed for Class A and Class B

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 22

1 fires. Under those listings these agents are listed  
2 at a proportioning rate of 1 percent to 3 percent.  
3 So if you're applying the agent in the field at a 1  
4 percent solution, you are applying the agent at  
5 10,000 milligrams per liter. So the concentration of  
6 the agent in the water solution is 10,000 milligrams  
7 per liter.

8           So in this situation, what you can have is a  
9 product that passes this aquatic toxicity test.  
10 Let's say their limit is 25 milliliters per liter,  
11 which means at that rate it kills 50 percent of  
12 (indiscernible). In the field it's going to be  
13 applied at 10,000 milligrams per liter. So you will  
14 have products that pass this requirement, giving a  
15 false sense of security to the firefighters and the  
16 authorities having jurisdiction that it's echo  
17 friendly when, in fact, if it's allowed to go into  
18 the water stream, it will kill fish. Thank you.

19           MR. JARD: Thank you. Mr. Brandeau, would  
20 you like to offer the Committee's position?

21           MR. BRANDEAU: Yes. As Mr. Griner stated,  
22 this has been a contentious issue in the Committee.  
23 The intent of the Committee in setting this  
24 requirement was to provide some guidance to  
25 authorities having jurisdiction who might not be able

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 23

1 to interpret the results reported for this testing  
2 without some guidance.

3           There were attempts made to compromise,  
4 including moving this material to annex so it would  
5 be advisory rather than mandatory. But that  
6 compromise was rejected, and the Committee majority  
7 view was to maintain it in the body of the standard.

8           I would like to defer to Committee Member  
9 Cecilia Johnson, who can speak further to the  
10 Committee's intent.

11           MR. JARD: All right. Thank you,  
12 Mr. Brandeau. With that we will open up debate on  
13 the motion. And please remember to provide your name  
14 and affiliation and whether you're speaking for or  
15 against the motion. Microphone 8, please.

16           MS. JOHNSON: My name is Cecilia Johnson,  
17 usually referred to as Ceci. I work for the U.S.  
18 Forest Service. I worked since 1970 in the forest  
19 service program that evaluates fire chemicals for use  
20 by the Forest Service and other federal agencies. I  
21 am a member of NFPA. I'm a member of the Technical  
22 Committee on Water Additives and also on Forest and  
23 Rural. I am speaking against the motion.

24           I have several points I'd like to make, one  
25 of which, as Mike has already stated, the toxicity

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 24

1 and environmental issues are very complex. This is  
2 especially a problem for very small, underfunded  
3 professional or volunteer organizations who need  
4 help. They need to have somebody tell them what's a  
5 reasonable thing to do on these very technical  
6 issues.

7           We also need to update and improve our  
8 documents in response to experience, changing uses,  
9 changing regulations, and public opinion. These  
10 products can and will get in the waterways regardless  
11 of where they are used, either in warehouses,  
12 structures, through spills, runoff storm sewers, or  
13 worst-case a transportation accident getting supplies  
14 to an incident or to a facility. We're going to have  
15 a problem with it.

16           I want to comment on a couple of things,  
17 just highlight some of the things that Mike covered.  
18 We're dealing with aquatic toxicity here. So we want  
19 to deal with LC-50's, the concentration in the  
20 environment in which the organism lives. And in this  
21 case, the bigger the better. The bigger that LC-50,  
22 the less toxic is the situation.

23           As for these being totally arbitrary  
24 numbers, that's not true. The EPA has set protocols,  
25 which we are requiring to be used. They have also

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 25

1 set, not by regulation but by guidance, a series of  
2 standard categories. Slightly toxic, which is  
3 between 10 and 100 parts per million as an LC-50, we  
4 feel is a good compromise between effectiveness and  
5 providing some safety measure for aquatic organisms.

6           That doesn't say that it's going to be safe  
7 in all conditions. A tanker truck going over into a  
8 small waterway will kill the organisms. However,  
9 small amounts of runoff from use, as they go into the  
10 waterway, they are going to be diluted further,  
11 meaning less toxicity.

12           I think that's what I wanted to say. Thank  
13 you very much.

14           MR. JARD: Microphone 1.

15           MR. GRINER: I would like to address some of  
16 those comments.

17           MR. JARD: Please remember to state your  
18 name, affiliation, and whether you're for or against  
19 the motion.

20           MR. GRINER: Mike Griner, Hazard Control  
21 Technologies. And I'm for the motion. Ceci points  
22 out some very good things.

23           One of the issues that was trying to be  
24 addressed, which has failed to be addressed by  
25 adopting 10 milligrams per liter, is that the smaller

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 26

1 fire departments don't have the resources. The issue  
2 is this does not solve the problem. The issue is one  
3 of the more environmentally aquatically  
4 toxic-friendly foams on the market that are listed  
5 under this standard has a value of 2350 milligrams  
6 per liter. When it is applied, since it's UL listed  
7 at 1 percent, it will be applied at 10,000 milligrams  
8 per liter.

9           So, therefore, even though it passes this  
10 requirement, if it's allowed to run into the  
11 waterways, it will kill fish. So by setting the  
12 value doesn't solve the problem. The only way to  
13 solve the issue is make the aquatic toxicity values  
14 known to the authorities having jurisdictions and to  
15 put in standards that these materials should be kept  
16 out of the waterway. That's the only way to solve  
17 the problem.

18           Well, I should say the second way to solve  
19 the problem would be setting an aquatic toxicity  
20 level that's up around 120,000 milligrams per liter  
21 because products aren't applied at that rate. But  
22 then there will be no products that would meet or  
23 that could be used as a fire suppressant agent.

24           The second issue she mentioned was a  
25 tractor-trailer truck going into the water. That's

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 27

1 really a moot issue here because if it goes in the  
2 water, it's the hydrocarbons killing the fish and has  
3 nothing to do with the aquatic toxicity of a fire  
4 suppressing agent.

5           Also, this does not take into consideration  
6 the performance between different agents. For  
7 example, if you had a structure fire and you are able  
8 to put that fire out in two minutes, you have very  
9 little fire runoff and fire debris runoff.

10           On the other hand, if it took you 30  
11 minutes, you would have a lot more fire debris runoff  
12 and a greater chance for that product to get into the  
13 stream.

14           So, again, the only way to resolve this  
15 issue is to address not getting these agents in the  
16 stream, not setting a value that is 1,000 times less  
17 stringent than what the products are actually applied  
18 in the field. Thank you.

19           MR. JARD: Microphone 8.

20           MS. JOHNSON: Thank you. This is Ceci  
21 Johnson again with the Forest Service speaking  
22 against the motion.

23           I believe that Mike has just illustrated one  
24 of the issues with trying to have all the  
25 jurisdictions set their own limits. And I want to do

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 28

1 some rounding just to make it simpler.

2           If you start out with a product that its  
3 concentrate has an LC-50 of 2000 milligrams per  
4 liter, when you use it at 1 percent, you are talking  
5 about 200,000 parts per milliliter in the solution.  
6 As soon as you have it in any kind of waterway, it  
7 becomes even more diluted. So if it had an initial  
8 LC-50 of 2000, that is 200 times the limit or 200  
9 times better than we are requiring.

10           We are simply trying to resolve some of the  
11 extremely toxic things. If I can put it in food type  
12 of things and ingestibles, we are going to try to  
13 screen out the strychnine and let you have your  
14 coffee. Thank you.

15           MR. JARD: Is there any other further  
16 discussion from the floor on Motion 18.1?

17           MR. GRINER: Mike Griner, Hazard Control  
18 Technologies, for the motion.

19           I think there's some number ease that was  
20 used there that's not really appropriate. Making  
21 mention that 2000 is ten times better than what we're  
22 requiring, that's kind of sidelining the issue. The  
23 issue is even if that agent goes in the water, it  
24 will kill the fish.

25           So if we're really trying to prevent from

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 29

1 aquatic events happening, setting this limit doesn't  
2 succeed in doing that. The only way to do that is to  
3 publish what the aquatic toxicity numbers are for the  
4 individual agents either on their material safety  
5 data sheet and/or on a product data sheet so that the  
6 authorities having jurisdiction know what they are  
7 because a product could have an aquatic toxicity of  
8 11 parts per milliliter or 11 milligrams per liter  
9 and pass this test and still be toxic when it's  
10 applied at 1 percent.

11 So my recommendation is to vote in favor of  
12 this so that the aquatic toxicity numbers show up on  
13 a product data sheet so that the authorities having  
14 jurisdiction can better understand they need to keep  
15 these fire suppression agents out of the waterways.  
16 Thank you.

17 MR. JARD: Mr. Brandeau, do you have any  
18 other commentary?

19 MR. BRANDEAU: I believe the viewpoints of  
20 the two opposing factions have been well articulated.

21 MR. JARD: Okay. Thank you. Microphone  
22 Number 3.

23 UNIDENTIFIED SPEAKER: Call the question,  
24 please.

25 MR. JARD: Okay. There's been a motion to

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 30

1 end debate. We'll vote on that motion now.

2 All in favor of ending debate on this  
3 motion, please raise your hand. All opposed. The  
4 motion carries, and we'll go to a vote on that  
5 motion.

6 Before we vote, just let me restate the  
7 motion on the floor is to reject an identifiable part  
8 on Comment 18-4.

9 All in favor of the motion, please indicate  
10 by raising your hand. All opposed to the motion,  
11 please raise your hand. The motion fails. Thank  
12 you, Mr. Brandeau.

13 The next report under consideration this  
14 morning is that of the **Technical Committee on the**  
15 **Liquified Petroleum Gas Code**. Here to present the  
16 Committee report is Committee Chair Frank Mortimer of  
17 EMC Insurance Company, Des Moines, Iowa.

18 The Committee report can be found in the  
19 blue 2010 Annual Revision Cycles ROP and ROC. The  
20 certified amending motions are contained in the  
21 Motions Committee Report and behind me on the screen.  
22 And again we will proceed in the order of the motion  
23 numbers presented. Mr. Mortimer.

24 MR. MORTIMER: Mr. Chair, ladies and  
25 gentlemen, the Report of the Technical Committee on

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 31

1   Liquified Petroleum Gases is presented for adoption  
2   and can be found in the Report on Proposals and  
3   Report on Comments for the 2010 Annual Meeting  
4   Revision Cycle.

5           The Technical Committee has published a  
6   report consisting of a partial revision of NFPA 58  
7   Liquified Petroleum Gas Code.

8           MR. JARD: Thank you, Mr. Mortimer. Now  
9   let's proceed with the discussion on the certified  
10  amending motions on NFPA 58. Microphone 5, please.

11           MR. HIRSCHLER: Marcelo Hirschler, GBH  
12  International, speaking for the Glossary of Terms  
13  Technical Advisory Committee, and I move for  
14  acceptance of Comment 58-15.

15           MR. JARD: Okay. There is a motion on the  
16  floor to accept Comment 58-15. Is there a second?

17           UNIDENTIFIED SPEAKER: Second.

18           MR. JARD: There is a second. Please  
19  proceed.

20           MR. HIRSCHLER: Thank you. The Glossary of  
21  Terms Technical Advisory Committee was set up by the  
22  NFPA Standards Council to get uniformity on  
23  definitions throughout the NFPA system.

24           This definition that we have in front of us  
25  is a definition of qualified persons. Right now

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 32

1     there are in the NFPA Glossary of Terms 19  
2     definitions of qualified persons or qualified  
3     individuals. And if you open up your ROC, the  
4     blue book, and go to page 58-5, you will see all of  
5     those definitions. Therefore, for all intents and  
6     purposes, there is no significant difference between  
7     all of those definitions.

8             And the way we are supposed to be doing  
9     things in NFPA is to try to get a definition that is  
10    consistent throughout the NFPA system. And this is  
11    what the Glossary of Terms Technical Advisory  
12    Committee is recommending.

13            Then we add an annex note that is specific  
14    to the actual document. In this case, the annex note  
15    addresses the specific issues that were in the  
16    definition that was put forward by the Committee on  
17    NFPA 58.

18            I urge you to support the consensus of the  
19    Glossary of Terms Technical Advisory Committee and  
20    the consensus of the Standards Council when this was  
21    put forward. Thank you.

22            MR. JARD: Mr. Mortimer, would you like to  
23    offer the Committee's position?

24            MR. MORTIMER: Yes. The Technical Committee  
25    opted to use the definition submitted in the revised

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 33

1 proposed document. Mr. Hirschler's definition is  
2 rather generic. And while being considered by the  
3 Technical Committee, it had a number of other issues  
4 and individuals that had made revisions to this. And  
5 we modeled it somewhat after the NFPA 54 definition.  
6 So we'll stand with what was submitted, as that was  
7 the desire of the Technical Committee.

8 MR. JARD: Thank you, Mr. Mortimer. With  
9 that, we'll open up debate on this motion. Please  
10 remember to provide your name, affiliation, and  
11 whether you're for or against the motion.  
12 Microphone 6.

13 MR. SWIECICKI: Thank you. My name is Bruce  
14 Swiecicki with the National Propane Gas Association.  
15 I'm a member of the Technical Committee on Liquefied  
16 Petroleum Gases speaking against the motion.

17 The definition is just not good code  
18 language. What it says is a person who has  
19 demonstrated the ability to deal with problems  
20 related to a particular subject matter. I'm sorry,  
21 but that is only a small portion of what a qualified  
22 person is in terms of the gas industry. We're  
23 looking for people that have demonstrated the ability  
24 to perform the necessary operations and functions  
25 that go along with that particular job.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 34

1           So the definition is very deficient. I urge  
2 you to support the Committee on this.

3           MR. JARD: Microphone 5.

4           MR. HIRSCHLER: Marcelo Hirschler, GBH  
5 International, speaking for the Glossary Committee.  
6 I think Mr. Swiecicki just made my point. You shall  
7 not look to the definition for your requirements.  
8 That is unacceptable. That's not the NFPA manual of  
9 style. The requirements are not in the definition.  
10 They are in other parts of the Code.

11           And all the information that the Committee  
12 wanted to have has been in accordance with the  
13 proposal as been moved to the annex. So all the  
14 information that the Committee wishes is still there.  
15 And you can read that in here.

16           With regard to the present Code, a qualified  
17 person should have been trained in handling or  
18 storing LPG gases or installing, repairing or  
19 maintaining LPG gas systems. If the Committee feels  
20 that that needs to be explained in detail and needs  
21 to be a requirement that the Committee wants to  
22 mandate as a requirement, then that definition in  
23 accordance with the manual of style is in the wrong  
24 place. They are in other parts of the document.

25           Please support the motion. Thank you.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 35

1           MR. JARD: All right. Is there any further  
2 debate from the floor? Mr. Mortimer, do you have any  
3 further comment?

4           MR. MORTIMER: I believe both positions have  
5 been stated. We received a number of Mr. Hirschler's  
6 changes. And the Committee reviewed each one and on  
7 this particular one did not defer to his action.

8           MR. JARD: Okay. Thank you. With that,  
9 we'll move to a vote on the motion. And before we  
10 vote, let me simply restate the motion. The motion  
11 on the floor is to accept Comment 58-15.

12           All in favor please raise your hand. Thank  
13 you. All opposed please raise your hand. The motion  
14 fails.

15           Okay. Let's move on to motion 58-2.  
16 Microphone 5.

17           MR. HIRSCHLER: Marcelo Hirschler, GBH  
18 International, speaking for the Glossary of Terms  
19 Technical Advisory Committee. I move to accept  
20 Comment 58-22.

21           MR. JARD: Okay. There's a motion on the  
22 floor to accept Comment 58-2. Is there a second?

23           UNIDENTIFIED SPEAKER: Second.

24           MR. JARD: There is a second. Please  
25 proceed.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 36

1           MR. HIRSCHLER: Thank you. In this case  
2 again what I'm doing is trying to introduce a  
3 definition that is the preferred definition by the  
4 NFPA Glossary. But there's one more issue here.

5           First of all, there are seven definitions in  
6 the NFPA Glossary of Terms for Fire Protection. The  
7 one recommended by this Technical Committee 58 is not  
8 a definition. It says, "Fire protection includes."  
9 "Fire protection includes" is not a definition.

10           So a definition has been provided, which  
11 will go into the process of getting uniformity of  
12 definitions within the NFPA process. Please support  
13 the definition. Thank you.

14           MR. JARD: Okay. Mr. Mortimer, would you  
15 like to offer the Committee's position.

16           MR. MORTIMER: Yes. The Technical Committee  
17 reviewed the comment but noted that the definition by  
18 Mr. Hirschler left out a major step in fire  
19 protection, which is fire prevention, which much of  
20 the LP code deals with. So in reviewing it, it's  
21 been revised and submitted by the Technical  
22 Committee. It was revised in another comment as  
23 well.

24           MR. JARD: Thank you, Mr. Mortimer. With  
25 that, we'll open up debate on the motion to accept

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 37

1 Comment 58-22. Remember, please state your name and  
2 affiliation, and whether you're for or against the  
3 motion. Microphone 9, please.

4 MR. HAGUE: Thank you, Mr. Chairman. David  
5 Hague with Liberty Mutual Properties, speaking in  
6 favor of the motion on the floor.

7 If this definition is defective, that means  
8 that all of the definitions in the National Fire  
9 Codes are defective. I would like to point out that  
10 this is only a definition. It's a description of a  
11 term. It does not contain a code statement, a  
12 requirement. As a matter of fact, it cannot contain  
13 a requirement. So a general description of this  
14 concept I think is appropriate for Chapter 3. If the  
15 Committee wants to further define this and establish  
16 requirements, that might be better placed in other  
17 chapters of the standard.

18 But, again, in order to obtain consistent  
19 terminology throughout the National Fire Codes, I  
20 would urge the membership to vote in favor of this  
21 motion. There are just too many redundant  
22 definitions in the National Fire Codes, and that just  
23 creates some inconsistency.

24 So, again, speaking in favor of the motion  
25 on the floor. Thank you.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 38

1           MR. JARD:   Microphone 6, please.

2           MR. SWIECICKI:   Thank you.   Bruce Swiecicki  
3   with the National Propane Gas Association.   I'm a  
4   member of the Technical Committee on Liquefied  
5   Petroleum Gases.   And I want to reiterate a little  
6   bit about what Chairman Crane said.

7           The definition as proposed is deficient  
8   because it doesn't include fire prevention.   And this  
9   is an example of a situation which a "one size fits  
10   all" definition will not work in a particular code.

11          MR. JARD:   Can you please state whether  
12   you're for or against the motion.

13          MR. SWIECICKI:   Against the motion.   Back in  
14   2001 when the fire safety analysis requirement came  
15   into NFPA 58 as a written document, we carefully  
16   crafted the definition of fire protection to include  
17   fire prevention.

18          And so this is a situation which we  
19   specifically needed to include that term in there in  
20   order to coincide with the changes that were made to  
21   the fire safety analysis requirement.

22          So we urge you to support the Committee and  
23   vote in opposition to the motion.   Thank you.

24          MR. JARD:   Microphone 5.

25          MS. CRONIN:   Marcelo Hirschler, GBH

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 39

1 International, for the Glossary Committee, in support  
2 of the motion.

3           Again, I want to point out that what  
4 Mr. Swiecicki is saying is that they want  
5 requirements in the definition. That is in contrary  
6 to the manual of style. Requirements are not in the  
7 definition. Definitions explain things.  
8 Requirements go somewhere else. Please support the  
9 motion.

10           MR. JARD: Is there any further discussion  
11 from the floor on this motion? Mr. Mortimer, do you  
12 have any last comments?

13           MR. MORTIMER: I believe both sides have  
14 been adequately heard.

15           MR. JARD: Okay. Thank you. With that,  
16 we'll move to a vote on the motion. Let me restate  
17 the motion on the floor. The motion on the floor is  
18 to accept Comment 58-22.

19           All in favor please raise your hand. Thank  
20 you. All opposed please raise your hand. Motion  
21 fails.

22           Okay. With that, let's move on to Motion  
23 58-3. Microphone 5, please.

24           MR. HIRSCHLER: Marcelo Hirschler, GBH  
25 International for the Glossary of Terms Technical

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 40

1 Advisory Committee. And I move to accept Comment  
2 58-30.

3 MR. JARD: Okay. Thank you. There's a  
4 motion on the floor to accept Comment 58-30. Is  
5 there a second? There is a second. Please proceed.

6 MR. HIRSCHLER: Thank you, Mr. Chairman.  
7 Again, this is similar to the previous ones. We're  
8 talking here about the definition of gas. Gas is a  
9 whole bunch of things. We cannot have a definition  
10 of gas that says gas is liquified petroleum gas.

11 Gas is a generic term. If you want to have  
12 a definition of gas that says gas is liquified  
13 petroleum gas, then you have to say for the purposes  
14 of this particular code because, otherwise, you're  
15 going against what every dictionary talks about.

16 So we have two motions in here. The present  
17 one accepts the definition with the explanation  
18 adding more specific issues in the annex, or the  
19 subsequent motion would just simply add for the  
20 purpose of this code. It is against the simple  
21 technical basic to say that gas is liquified  
22 petroleum gas. It is not.

23 MR. JARD: All right. Thank you.  
24 Mr. Mortimer, would you like to offer the Committee's  
25 position?

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 41

1           MR. MORTIMER: Yes. The Committee looked at  
2 the section that this definition is in. And Section  
3 3.1 of this states that the definition contained in  
4 this chapter shall apply to the terms in this Code.  
5 Since it's already in that section, adding it again  
6 for the purposes of this code seemed redundant to the  
7 Technical Committee.

8           MR. JARD: All right. Thank you,  
9 Mr. Mortimer. With that, we'll open up debate on the  
10 motion. Please remember to state your name and  
11 affiliation and whether you're for or opposed to the  
12 motion on the floor. Microphone 5.

13           MR. HIRSCHLER: Marcelo Hirschler, GBH  
14 International, for the Glossary Committee, in favor  
15 of the motion.

16           I would need to point out that every NFPA  
17 definition doesn't just sit in the document in which  
18 it is defined but sits in the entire glossary. So if  
19 we don't put the rider in there for the purpose of  
20 this code, we have the NFPA stating to the world that  
21 gas is liquified petroleum gas. That is nonsense.  
22 Please support the motion.

23           MR. JARD: Microphone 9.

24           MR. HAGUE: Thank you, Mr. Chairman. David  
25 Hague, with Liberty Mutual Properties, speaking in

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 42

1 favor of the motion on the floor.

2           The comment refers to a proposal that  
3 defines gas, as Mr. Hirschler just referenced, as  
4 liquified petroleum gas. There are certainly other  
5 types of gases.

6           The chairman also made a statement that for  
7 the purposes of this code, that's referred to as the  
8 limiting phrase. And believe it or not, there is an  
9 ASTM standard on how to write terminology and such a  
10 statement as for the purpose of this code, which is  
11 called a delimiting phrase, would be appropriate.

12           So as written, this definition of gas is  
13 quite deficient even though for the purpose of NFPA  
14 58, you certainly are talking about liquified  
15 petroleum gas. So I urge this membership to support  
16 the motion on the floor to try to achieve more  
17 consistent terminology in the National Fire Codes.  
18 Thank you.

19           MR. JARD: Microphone Number 5.

20           UNIDENTIFIED SPEAKER: Good morning.

21 (Indiscernible) of the American Society of  
22 Anesthesiologists. Mr. Hirschler is right. If you  
23 look in the medical area, we have medical gases that  
24 are extremely important throughout NFPA 99. To  
25 confuse medical gases with liquified petroleum would

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 43

1 be absurd. And I think in order to try to -- this is  
2 an important term. Gas is very important in the  
3 medical world. It has nothing to do with this  
4 particular code. I think we need to have a  
5 consistent definition.

6 MR. JARD: Mr. Mortimer, do you have any  
7 further comment?

8 MR. MORTIMER: Yes. The glossary in which I  
9 received indicated not only the definition, but also  
10 which code that definition applied to. And I believe  
11 the Technical Committee continues to think it's a bit  
12 redundant to add something that's already there in  
13 the definition section.

14 MR. JARD: Okay. Thank you. With that,  
15 we'll move to a vote on the motion. Restated, the  
16 motion on the floor is to accept Comment 58-30.

17 All in favor of the motion, please raise  
18 your hand. Thank you. All opposed please raise your  
19 hand. The motion carries. With that, let's move on  
20 to the next motion, 58-4.

21 MR. HIRSCHLER: Mr. Chairman, Marcelo  
22 Hirschler, GBH International, for the Glossary  
23 Committee. I choose not to pursue this motion.

24 MR. JARD: The Chair accepts the withdrawal  
25 of that motion. Thank you. And we'll proceed to the

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 44

1 next motion in Table A, and that would be Motion  
2 58-5.

3 MR. WANKO: Good morning. Jeff Wanko  
4 representing the United States Chemical Safety Board.  
5 And I'm making a motion to accept Comment 58-49.

6 MR. JARD: Okay. The motion on the floor is  
7 to accept Comment 58-49. Is there a second? There  
8 is a second. Please proceed.

9 MR. WANKO: Thank you. Good morning. In  
10 January 2007 deadly propane explosions occurred in a  
11 convenient store in West Virginia. The explosion  
12 killed two firefighters and two propane technicians.  
13 Five people, including two other emergency personnel,  
14 were severely injured. This horrible tragedy should  
15 not have happened.

16 I led the United States Chemical Safety  
17 Board's investigation. Our team conducted a thorough  
18 inquiry to all aspects of this tragedy. We  
19 determined that an uncontrollable release of propane  
20 occurred when an inexperienced propane technician was  
21 preparing for a tank-to-tank liquid transfer.

22 A 500-gallon propane tank was installed  
23 directly against the store's exterior wall. The  
24 technician removed the plug from the tank's liquid  
25 withdrawal line, causing a propane release that

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 45

1    lasted over 28 minutes.  There was no evacuation.  
2    The propane eventually reached an ignition source and  
3    exploded, completely destroying the store and causing  
4    fatalities and injuries.

5            Tank-to-tank propane transfers are among the  
6    most dangerous tasks a propane technician can  
7    undertake.  It is a task only to be performed by the  
8    most experienced technicians, not one for a  
9    technician on the job for only six weeks.

10           Propane is used in millions of applications  
11   across the United States, in homes, farms, and  
12   workplaces.  Our research has shown that an incident  
13   involving propane requiring the assistance of the  
14   fire department occurs nearly once a day in the  
15   United States.

16           Among many other aspects of our  
17   investigation, my team examined NFPA 58 to determine  
18   the training requirements for propane technicians.  
19   We found that NFPA 58 does require training but does  
20   not define the training, the curriculum, or the  
21   knowledge that a propane technician must possess.  
22   The Code states that those transferring propane only,  
23   quote, shall be trained in proper handling  
24   techniques.

25           The CSB's presidentially appointed board

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 46

1 made a formal recommendation to the NFPA 58 Committee  
2 on September 5th, 2008, to approve the propane  
3 technician training violation because the use of the  
4 word "proper" is vague, unenforceable, and  
5 inconsistent with the NFPA's own manual of style for  
6 clear and precise requirements.

7           In response to our recommendation during the  
8 proposal phase, the Committee decided to place  
9 reference material in the annex. While this is a  
10 good addition, the annex material is not required nor  
11 enforceable. The CSB intended to add an enforceable  
12 training code, such as a training time frame,  
13 supervised on-the-job training, safe work practices,  
14 hazard recognition, emergency actions, and a means by  
15 which to judge the trainee's knowledge.

16           The Board believes the NFPA Committee should  
17 incorporate these modern training elements into the  
18 Code. The CSB recommendation seeks only clear  
19 definition of what the Code already requires. It  
20 does not entail additional or more burdensome  
21 training requirements.

22           Following the NFPA Report on Proposals, the  
23 CSB submitted comments to the NFPA Committee to  
24 clarify our recommendation. Our comments reflect the  
25 principles of chemical process safety found in OSHA's

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 47

1 Regulations and EPA's Risk Management Program.

2           We were disappointed, however, when we  
3 learned the Committee rejected all but one of our  
4 comments. The Committee added an emergency response  
5 component to the training requirements, but this  
6 element alone is not equivalent to comprehensive  
7 training in the view of the CSB. We believe that if  
8 this language is not changed, we are bound to  
9 experience a repeat of this same type of incident.

10           In the Fuels Relief Act of 1999, Congress  
11 intended that NFPA 58 act as a safety regulation for  
12 the propane industry. Only by improving the training  
13 language can the Code achieve this goal. The  
14 widespread use of propane and the frequency of  
15 propane emergencies demands that technicians receive  
16 comprehensive training.

17           The CSB firmly believes this change in NFPA  
18 58 is necessary to save lives of propane technicians,  
19 firefighters, and the public by reducing the number  
20 of propane emergencies that involve inexperienced  
21 propane technicians.

22           I am here representing the Chemical Safety  
23 Board today to urge the NFPA to adopt our  
24 recommendation and pass this motion. Thank you.

25           MR. JARD: Mr. Mortimer, would you like to

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 48

1 offer the Committee's position?

2 MR. MORTIMER: Yes, please. There were  
3 several changes made to Section 4.4 by the Committee.  
4 Some of these were made with an eye towards the  
5 Chemical Safety Board and their requests and also the  
6 additions that Jeff mentioned that were placed in the  
7 appendix as well.

8 While Jeff mentions the recommendation comes  
9 from a terrible event in North Carolina where there  
10 was much life lost, the current requirements that  
11 training be done were ignored. And that is probably  
12 more likely the result of the lack of using the  
13 current Code than it is of needing additional code.

14 The Technical Committee reviewed, revised,  
15 and deliberated at great length the changes that were  
16 recommended by the Chemical Safety Board. The  
17 Technical Committee has concerns that applying such a  
18 broad brush in this requirement for all persons in  
19 the industry would be unworkable.

20 While it might be good to apply some of such  
21 testing to persons that spend a majority of their  
22 working day delivering and servicing propane, to ask  
23 the recreational vehicle park owners, the convenient  
24 store owners, and others that have a cylinder fill or  
25 cylinder cage to apply the same stringent requirement

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 49

1 to the revolving door of employees that they have to  
2 train and work with in their businesses, the  
3 Technical Committee did not include much of what the  
4 U.S. Chemical Safety Board had, but rather placed it  
5 in the annex where it could be used as reference  
6 material for the industry.

7 MR. JARD: Thank you, Mr. Mortimer. With  
8 that, we'll open up debate on this motion. Remember  
9 to please provide your name, affiliation, and whether  
10 you're for or against the motion. Microphone  
11 Number 6.

12 MR. FREDENBURG: Richard Fredenburg, North  
13 Carolina Department of Agriculture and Consumer  
14 Services, Standards Division. I'm speaking against  
15 the motion.

16 I do want to correct something Mr. Mortimer  
17 just said, that the accident was in North Carolina.  
18 It was actually in West Virginia.

19 The issue of training has been brought up  
20 many times in the Committee. I'm also a Committee  
21 member. And with the definition that's there, a  
22 number of states have taken it upon themselves to  
23 create their own required training programs. And the  
24 language in the Code allows that. Others have  
25 somewhat defaulted to some of the industry standards,

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 50

1 such as the certified employee training program.

2           And I'm afraid that if the language that is  
3 being proposed goes into effect, that some of those  
4 existing states that have already developed their own  
5 programs will have to seriously modify them. And it  
6 will take some of the independence of the states  
7 rights away to design a program that fits their  
8 needs.

9           MR. JARD: Is there any further discussion  
10 from the floor? Mr. Mortimer, do you have any final  
11 comment?

12           MR. MORTIMER: No, I'd say --

13           MR. JARD: Oh, I'm sorry, Mr. Gomez.  
14 Mike 5. I didn't see you. I apologize.

15           THE WITNESS: Jeff Wanko, United States  
16 Chemical Safety Board, again speaking for the motion.

17           If I may correct something Mr. Mortimer  
18 said. The root cause in this accident, one of many  
19 root causes, was certainly the training that this  
20 junior technician was given. He was in a training  
21 program. He was slated for a spot in the next round  
22 of CTEP that his employer was going to hold.

23           However, he was advanced in his on-the-job  
24 training to a point where he could perform this  
25 tank-to-tank liquid transfer, which he was

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 51

1     inexperienced for. And he was unable to act when an  
2     emergency occurred. And that's what this case was  
3     about. It was about the actions taken during the  
4     emergency. There were a lot of other factors that  
5     led to this. Certainly if you read our report or  
6     watch our video on this incident, there were a lot of  
7     causes, but certainly his inexperience was an  
8     important factor. Training was not ignored in this  
9     case.

10             I would like to read a letter from Sterling  
11     Lewis, West Virginia State Fire Marshall, if I may,  
12     to the Honorable John Breslin, Chairman of the U.S.  
13     Chemical Safety Board.

14             "Dear Chairman Breslin:

15             "The West Virginia Office of the State Fire  
16     Marshall supports the efforts of the U.S. Chemical  
17     Safety and Hazard Investigation Board to add modern  
18     performance-based language to the training  
19     requirements of NFPA 58.

20             "The Office of the State Fire Marshall  
21     responded to the tragic explosion and fire at the  
22     Little General Store in West Virginia and along with  
23     the CSB determined that the incident was entirely  
24     preventable.

25             "As a long-standing member of the fire

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 52

1 service, I found that propane emergencies happen too  
2 frequently. My staff and the staff of all municipal  
3 fire departments across the United States often  
4 depend upon the expertise of propane technicians to  
5 advise responders on the proper course of action  
6 during these events.

7 "Only by adding specific and enforceable  
8 language to the training requirements of NFPA 58 can  
9 we be assured that these incidents do not result in  
10 tragic outcomes in the future.

11 "Please consider the CSB's motion for the  
12 addition to the proposed language. Thank you.

13 "Sterling Lewis, Jr., Virginia State Fire  
14 Marshall."

15 Again, our motion here is not to add an  
16 additional requirement or to detract from what states  
17 have done. We understand all states have adopted  
18 NFPA 58 in one fashion or another.

19 Our goal here is to add modern training  
20 language that can be found in the PSM, the RMP, under  
21 OSHA and NFPA, respectively, and to give those  
22 employers out there, those propane marketers,  
23 guidance on what a good training program, a  
24 comprehensive training program, constitutes.

25 Simply by leaving the existing language in

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 53

1 NFPA 58, proper handling techniques gives the propane  
2 marketers no guidance. Our language adds to that,  
3 gives them guidance, does not detract from what the  
4 states have done, and will improve safety across the  
5 nation. Thank you.

6 MR. JARD: Microphone 6.

7 MR. FREDENBURG: Again, Richard Fredenburg,  
8 North Carolina Department of Agriculture and Consumer  
9 Services, Standards Division. Speaking as an  
10 enforcement official --

11 MR. JARD: For or against?

12 MR. FREDENBURG: I'm sorry, against the  
13 motion. Speaking as an enforcement official, we find  
14 that in the incident that's being discussed, the  
15 fault was with the person who had been trained  
16 because he knew that the junior person had not  
17 received full training. But contrary to his  
18 training, he left to go to another site to do another  
19 job. And when he came back, he violated some more of  
20 the training.

21 So even though his training was completed,  
22 was documented, he didn't follow it. So it's more an  
23 issue of following the training than getting the  
24 training. And this is what we found in several  
25 incidences in my state too.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 54

1           MR. JARD: Mr. Mortimer?

2           MR. MORTIMER: Tank-to-tank transfer by  
3 petroleum companies is not done often and never  
4 should be left to an individual that has been with a  
5 company a short time and has received as of yet no  
6 training to actually perform that task.

7           The issue here is not so much the change  
8 that is being requested by the Chemical Safety Board  
9 but that the current training requirements weren't  
10 being followed. And if those individuals had been  
11 trained and done their job correctly, we wouldn't be  
12 talking about this incident at all.

13           Let's get back to the section that Jeff is  
14 asking for the change on. There were several  
15 requests for change on this section. The Technical  
16 Committee did include much of what those changes  
17 requested asked for. We have passed on to you our  
18 best at being able to present the changes to the  
19 "qualified person" definition that we have.

20           MR. JARD: Thank you. With that, we'll move  
21 to a vote on the motion. And, restated, that motion  
22 is to accept Comment 58-49.

23           All in favor of the motion, please raise  
24 your hand. All opposed please raise your hand. I  
25 can't tell. We're going to go to a standing vote.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 55

1 It was kind of a little too spread out to tell.

2 All those in favor of the motion, please  
3 stand. You may be seated. All those opposed to the  
4 motion, please stand. Thank you. You may be seated.

5 The vote was 66 for and 35 against. The  
6 motion carries.

7 Okay. Motion 58-6, the next on our docket  
8 on NFPA 58, appeared on our agenda. However, the  
9 authorized maker of the motion has notified NFPA that  
10 they no longer wish to present this motion.

11 Therefore, in accordance with NFPA rules,  
12 Convention Rules 2.6, the motion may not be  
13 considered by the assembly and is removed from the  
14 agenda. We will now move on to the next motion, that  
15 motion being Motion 58-7. Microphone Number 3.

16 MR. FREDENBURG: Richard Fredenburg, North  
17 Carolina Department of Agriculture and Consumer  
18 Services, Standards Division. I move that proposal  
19 58-154 be accepted. However, I wish to make a slight  
20 modification to it during the discussion.

21 MR. JARD: But before I rule on whether or  
22 not we're going to entertain that modified motion,  
23 can you please explain how you want to modify your  
24 motion?

25 MR. FREDENBURG: We would not include the

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 56

1 retroactivity part.

2 MR. JARD: Can you be more specific with the  
3 wording, please? Sir, we simply need to get the  
4 words on the record, what you want to modify.

5 MR. MORTIMER: If I could.

6 MR. JARD: Sure. Go ahead, Mr. Mortimer.

7 MR. MORTIMER: I believe the section he  
8 would like to not include is in Comment 58-154. And  
9 it says, "This requirement shall apply to all new  
10 installations and to existing installations within  
11 one year of the adoption of this Code. I believe  
12 that's the part Richard would like to not include in  
13 his motion. Am I correct, Richard?

14 MR. FREDENBURG: That's correct.

15 MR. JARD: Okay. So the motion is -- and  
16 let me restate it is we have it straight -- to accept  
17 your proposal 58-154 and then omitting the words "and  
18 to all existing installations within one year from  
19 adoption of this code"; is that correct?

20 MR. FREDENBURG: Almost. "Eliminating and  
21 to all existing installations within one year of  
22 adoption of this Code."

23 MR. JARD: Okay. The modification of  
24 proposal is at the discretion of this chair, and I am  
25 inclined to allow the motion, provided there is no

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 57

1 objection from the body. Is there a second for the  
2 motion? Okay. Seeing no one offered any objection,  
3 please proceed.

4 MR. FREDENBURG: Actually, the first part of  
5 that sentence would become unnecessary because it  
6 would automatically apply to all new installations.  
7 So we can strike that whole second sentence where it  
8 says, "This requirement shall apply to all new  
9 installations and to all existing installations  
10 within one year of adoption of this Code," strike  
11 that whole sentence from my motion.

12 MR. JARD: So you're stating you wish to  
13 further modify your motion?

14 MR. FREDENBURG: I'm clarifying what I want,  
15 yes.

16 MR. JARD: Can you please restate how you  
17 want the text to read?

18 MR. FREDENBURG: The text would then read,  
19 "Containers for stationary engines shall be installed  
20 to meet the separation requirements of section 16.3  
21 except as modified in Section 11.14.17."

22 And then the second part would read, "Where  
23 containers for stationary engines having a fill valve  
24 with an integral manual shutoff valve, the minimum  
25 separation distances shall be one-half of the

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 58

1 distances specified in Section 6.3."

2 MR. JARD: So your motion then -- okay, sir,  
3 I understand how you modified your modification. And  
4 again I'm going to be inclined to allow it as long as  
5 we get a second for that modification. We have a  
6 second. Please proceed.

7 MR. FREDENBURG: The chapter on engine fuel  
8 systems was created in the 1992 edition of the LP gas  
9 code. It was pulled mostly from the chapter on LP  
10 gas system installations. And in that chapter there  
11 were requirements for separation where containers for  
12 stationary engines were installed.

13 When the engine fuel systems were pulled out  
14 of the installations chapter 18 years ago, separation  
15 requirements from that chapter no longer applied to  
16 the containers for engine fuel because of scope  
17 statements.

18 For vehicle-mounted containers, new location  
19 and separation requirements were developed. This has  
20 not happened for stationary engines and their  
21 container. And it has not been a problem because  
22 there were relatively few stationary engine  
23 installations.

24 With the new interest in using propane for  
25 fuel or remote site power generators for various

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 59

1 agriculture stationary engines and for home emergency  
2 generators, we realized that the separation  
3 requirements for these containers cannot be enforced  
4 because the LP gas code has no separation  
5 requirements that apply.

6           The installer of a home emergency generator  
7 could have the 500 or 1,000 gallon tank placed right  
8 besides the house if the tank serves the generator  
9 only. But the same size propane tank would have to  
10 be at least 10 feet from the house if the gases is  
11 using for cooking and heating.

12           This proposal is intended to require the  
13 separation distances for all propane tanks that have  
14 been required in NFPA 58 since the 1930's. It gives  
15 installations to have an added safety feature of a  
16 manual shutoff valve built into the fill valve by  
17 allowing the separation distances to be halved. This  
18 recognizes the limited space available in crowded  
19 cell phone tower sites where propane power emergency  
20 generators are becoming common.

21           I want to point out that the Committee  
22 statement for rejecting this proposal simply said  
23 that it, quote, is in conflict with 6.2.2(4),  
24 unquote. That paragraph states that engine fuel  
25 containers are allowed in buildings. There was

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 60

1 absolutely no technical justification for the  
2 rejection. No argument against the proposal was  
3 stated. It is clear to me that some separation  
4 between containers and buildings, especially  
5 dwellings, is essential.

6 MR. JARD: Okay. We'll open up debate on  
7 this motion as modified. Mr. Mortimer?

8 MR. MORTIMER: Yes. The motion that has  
9 been made is not without merit. And as I have it  
10 here changed, 11.14.16 reads, "Containers for  
11 stationary engines installed outdoors shall be  
12 installed to meet the separation requirements of  
13 Section 16.3 except as modified in Section 11.14.17."

14 Section 11.14.17 then states, "Where  
15 containers for stationary engines have a fill valve  
16 with an internal manual shutoff valve, the minimum  
17 separation distances shall be one-half of the  
18 distances specified in Section 6.3."

19 And that would be consistent with two other  
20 motions that the Committee had addressed. There  
21 would be no reason to oppose it.

22 MR. JARD: Thank you, Mr. Mortimer. Is  
23 there any further discussion on this motion? Okay.  
24 Seeing none, we'll move to a vote on the motion on  
25 the floor. And let me restate that motion is to

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 61

1 accept Proposal 58-154 as modified. That  
2 modification is to omit the sentence, "This  
3 requirement shall apply to all new installations and  
4 to all existing installations within one year of  
5 adoption of this Code."

6 All in favor of the motion, please raise  
7 your hand. Thank you. All opposed. The motion  
8 carries.

9 Okay. With that, we'll move on to our  
10 Motion Sequence Number 58-8. Microphone Number 3,  
11 please.

12 MR. FREDENBURG: Richard Fredenburg, North  
13 Carolina Department of Agriculture and Consumer  
14 Services, Standards Division. I move that Comment  
15 58-37 be accepted.

16 MR. JARD: Is there a second?

17 UNIDENTIFIED SPEAKER: Second.

18 MR. JARD: There is a second. Please  
19 proceed.

20 MR. FREDENBURG: I am a state official in  
21 charge of an LP gas inspection program. I submitted  
22 the proposal in an attempt to ensure that the  
23 responsible safety inspections on large propane  
24 storage installations are performed in all states.  
25 Some states do not have an active inspection program.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 62

1 And inspections of installations in most states may  
2 be conducted by the operating company. This is not  
3 an independent inspection. And there may not be any  
4 oversight of the inspectors if, indeed, any  
5 inspections are being done.

6 The Committee response to my proposal for  
7 the rejection was that, quote, the Committee is  
8 advised that this function is already being addressed  
9 by authorities and insurance companies, unquote.

10 After my proposal was rejected, questions to  
11 insurance company representatives about inspections  
12 drew a response that they do not do NFPA-58-based  
13 inspections of propane sites. But we know that  
14 insurance companies are proponents of safety. So  
15 they should be in favor of independent confirmation  
16 or compliance of safety requirements. I wrote a  
17 comment asking to reverse the rejection of the  
18 proposal.

19 The Committee's statement for their  
20 rejection of the comment was beefed up some but  
21 essentially similar to their statement for rejecting  
22 the proposal. And it was, "The Committee believes  
23 that the frequency and extent of the inspection is  
24 the responsibility of the AHJ and notes that the  
25 requirements for inspection of key safety equipment

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 63

1 is already in the Code." In some states there is no  
2 active authority. So who does the inspection?  
3 First, let's see how states with a program administer  
4 it.

5           Typically the responsibility for LP gas  
6 safety inspections is in the state fire marshal's  
7 office. One state that I know of has each county  
8 fire marshall responsible for the inspection. They  
9 have no central enforcement. Several states have an  
10 LP gas, an appointed board that sets policy and  
11 oversees the inspection of gas.

12           The state department of agriculture has the  
13 responsibility in at least two states, including  
14 mine. But what about states that have no active  
15 program? One state, Missouri, dismissed their safety  
16 inspector some years ago due to budget issues. They  
17 have recently appointed a board in getting their  
18 programs started again. Have other states done the  
19 same due to budget problems?

20           I've been trying for years to make contact  
21 with those supervising the inspection programs in  
22 each state. I'm almost halfway there, which  
23 indicates to me that the program does not have high  
24 priority in many states.

25           Prior to a BLEVE in Iowa, where there were

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 64

1 deaths, they had no inspection program. And a BLEVE  
2 is a catastrophic tank failure. I still have no  
3 contact there. I firmly believe that some states  
4 have no safety inspection program. So again I ask,  
5 who's doing the inspections?

6           One action that this change could make is  
7 that sites that have not been submitted to a state  
8 authority and have not been approved could be  
9 identified. In January of this year, a site in South  
10 Carolina, a state with an active LP gas program  
11 coordinated by the state fire marshal's office, had a  
12 fire and truck driver died of burns. Even though the  
13 installation had been in place for 11 years, it was  
14 not known to the state authorities.

15           After the fire, several safety issues  
16 concerning piping installation were identified. If  
17 the insurance company for the industry that had this  
18 site as a standby gas supply had pointed out the need  
19 for an independent inspection, the state most likely  
20 would have been contacted with the inspection and  
21 would have found out about the installation and its  
22 problems. An inspection would have been performed,  
23 corrections would have been specified, and the  
24 driver's life might have been saved.

25           The key failure at this site was a corroded

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 65

1 pipeline, an item that does not have the specified  
2 inspection integral. Thus, the Committee's statement  
3 for rejection does not address all safety equipment.

4 Other states also report that even with  
5 active inspection programs and a requirement to  
6 notify before a bulk LP storage site is developed,  
7 some sites go undetected for several years. This  
8 happens even in my state, and we have a very active  
9 program.

10 A requirement for an independent inspection,  
11 especially if it is an insured site and the insurance  
12 company keeps track of their insured, could serve to  
13 notify the state authorities of the presence of sites  
14 that need safety inspections.

15 MR. JARD: Mr. Mortimer, would you like to  
16 offer the Committee's position?

17 MR. MORTIMER: Yes. There currently is an  
18 inspection required in the Code of key equipment.  
19 And the Technical Committee believes is adding an  
20 outside inspection requirement. Currently, the  
21 frequency and the extent of the inspection is the  
22 responsibility of the authority having jurisdiction.

23 In reviewing and discussing this at length,  
24 this was a 25 to 26 rejection by our Committee.  
25 While I understand that there is some frustration in

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 66

1 the industry with the variety of people that are the  
2 authority having jurisdiction, they are addressed in  
3 the Code. And creating an outside independent  
4 inspection would be a burdensome requirement that  
5 could be monetarily detrimental to many of our  
6 dealers.

7 MR. JARD: Thank you. With that, we'll open  
8 up debate on the motion. Please remember to state  
9 your name, affiliation, and your position on the  
10 motion. Microphone Number 6.

11 MR. SWIECICKI: Thank you. Bruce Swiecicki,  
12 National Propane Gas Association and member of the  
13 Technical Committee on Liquefied Petroleum Gases  
14 speaking in opposition to the motion.

15 As Chairman Crane pointed out, the Technical  
16 Committee overwhelmingly rejected both the proposal  
17 and the comments on this particular issue. The  
18 authority having jurisdiction is responsible for  
19 inspecting and approving all installations and can do  
20 so at any time. There is no need to impose a  
21 five-year time frame for that to take place.

22 The proposal has some inherent flaws in it.  
23 One of them is to place the burden of code  
24 enforcement on the owner of the facility by requiring  
25 him to contract a third-party inspection agency.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 67

1 This leads to another serious flaw. And that is the  
2 proposal will be impossible to comply with because  
3 once a marketer contracts with an independent  
4 inspection agency, that agency is no longer  
5 independent because now it is serving in a business  
6 relationship with the marketer.

7 Finally, NFPA 58 does require testing and  
8 inspection of the primary valves and safety  
9 activation systems for those valves. And that is a  
10 yearly requirement. I urge you to support the  
11 Technical Committee on this and reject the motion.  
12 Thank you.

13 MR. JARD: Microphone Number 6.

14 MR. GOLDBERG: Ruben Goldberg speaking  
15 against the motion. If I am correct, the maker of  
16 the motion indicated that the fire service did not  
17 know about this facility, which means there are no  
18 permitting requirements in his lovely state --  
19 because I haven't been there, I think it's a lovely  
20 state -- to notify anybody that it existed. And,  
21 therefore, the problem is not knowing the facility is  
22 there and not the inspection.

23 MR. JARD: Microphone 3.

24 MR. FREDENBURG: Richard Fredenburg,  
25 North Carolina Department of Agriculture, speaking

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 68

1 for the motion.

2           There is a requirement in every state that  
3 references NFPA 58 that notification be given to the  
4 authority having jurisdiction before a bulk storage  
5 site is installed. Some years ago, there was some  
6 discussion what the authority having jurisdiction  
7 would have to do in response. And that was left out  
8 because it was noted that many states don't have an  
9 active authority having jurisdiction or one that will  
10 reply. So that part was just left out.

11           So, yes, where the accident occurred in  
12 South Carolina -- we've had our own share but not  
13 this one -- they had the requirement of notification,  
14 but the installer failed to do so. We've had that  
15 situation in North Carolina several times. My  
16 inspectors routinely -- by that I mean two to five  
17 times a year -- find sites that qualify as bulk sites  
18 that have not been through the approval process.

19           So it's both a notification of installation  
20 and a way that we can fix this by the required  
21 inspection.

22           MR. JARD: Microphone Number 2.

23           MR. GLASS: Good morning, Mr. Chair. Art  
24 Glass, Environmental Fire Protection Associates, call  
25 the question.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 69

1           MR. JARD: All right. There is a motion to  
2 end debate on the motion on the floor. We'll go  
3 right to a vote on that motion.

4           All in favor of ending debate, please raise  
5 your hand. Thank you. All opposed. Motion carries.  
6 And with that, we'll move to a vote on the motion on  
7 the floor. That motion is to accept Comment 58-137.

8           All in favor of the motion, please raise  
9 your hand. Thank you. All opposed to the motion,  
10 please raise your hand. The motion fails. And with  
11 that, that ends our debate of NFPA 58 or our  
12 discussion of NFPA 58.

13           We'll take a ten-minute comfort break. Upon  
14 your return, Ron Farr, Member of the Council, will  
15 serve as the presiding officer for the next couple of  
16 documents. A ten-minute break, please.

17           (A brief recess was taken.)

18           CHAIR FARR: The next report under  
19 consideration this morning is that of the **Technical**  
20 **Committee on Water Cooling Towers**. Here to present  
21 the Committee Report is Committee Chair Christopher  
22 Spencer from Rhode Island.

23           The Committee Report can be found in the  
24 white 2009 Fall Revision Cycle ROP and ROC. The  
25 certified amending motions are contained in the

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 70

1 Motions Committee Report behind me on the screen.

2 Mr. Spencer will be stepping down as chair  
3 due to the ten-year policy. I would like to express  
4 mine and our sincere thanks for his leadership on the  
5 Committee. We will now proceed in the order of the  
6 motion number presented. Mr. Spencer.

7 MR. SPENCER: Thank you, Mr. Chair.

8 Mr. Chairman, ladies and gentlemen, the  
9 Report of the Technical Committee on Water Cooling  
10 Towers is presented for adoption and can be found in  
11 the Report on Proposals and Report on Comments for  
12 the 2009 Fall Meeting Revision Cycle.

13 The Technical Committee has published a  
14 report consisting of a partial revision of the NFPA  
15 214 Standard on Water Cooling Towers. The presiding  
16 officer will now proceed with the certified amending  
17 motion.

18 CHAIR FARR: Thank you, Mr. Spencer. Let's  
19 now proceed with the discussion on the certified  
20 amending motions on NFPA 214. Microphone 5, please.

21 MR. HIRSCHLER: Marcelo Hirschler, GBH  
22 International, for the Glossary Technical Committee.  
23 And I move to reject Comment 214-1.

24 CHAIR FARR: Thank you. There is a motion  
25 on the floor to reject Comment 214-1. Is there a

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 71

1 second? We do have a second. Please proceed with  
2 the discussions on the motion.

3 MR. HIRSCHLER: This is very simple. If you  
4 look at the blue book on page 214-1. Well, actually,  
5 there's two 214-1's, but the second 214-1, which  
6 shows the only comment in here. And the comment that  
7 was put by the Technical Committee was to add the  
8 words "in accordance with section 4.9" on the  
9 definition of "fire resistant partition."

10 That is not in keeping with the manual of  
11 style. The manual of style says the requirements  
12 shall not be included in the definition.

13 And also I want to point out, like we  
14 discussed earlier today, that definitions are going  
15 to go into the general glossary of terms. And in the  
16 general glossary of terms, you're going to see  
17 something that says "a fire resistant partition is a  
18 continuous partition suitable for use in accordance  
19 with Section 4.9. That has nothing to do with the  
20 general concept. The concept has to go in the body  
21 of the text, not in the definition. Thank you.

22 CHAIR FARR: Mr. Spencer, would you like to  
23 offer the Committee's position?

24 MR. SPENCER: Yes, Mr. Chair. The Committee  
25 feels that the change that it made to the definition

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 72

1 during the ROC process clarifies the requirements for  
2 the partition. While being in keeping with the  
3 manual style by not adding the mandatory "shall"  
4 requirements to the definition.

5           During the ROC voting process, the Committee  
6 voted unanimously in support of the definition  
7 change. Of 18 voting members, 14 ballots were in the  
8 affirmative and 4 were not returned.

9           Subsequent to the receipt of the NITMAM, a  
10 teleconference meeting was held to discuss the  
11 motion. While a limited number of members were  
12 available to participate, the voting members who did  
13 participate voted unanimously against the motion.

14           CHAIR FARR: Thank you, Mr. Spencer. With  
15 that, we will open up the debate on the motion.  
16 Please provide your name and affiliation and whether  
17 you are speaking in support of or against the motion.  
18 Microphone 2, please.

19           MR. ISMAN: Thank you, Mr. Chair. Ken Isman  
20 with the National Fire Sprinkler Association, member  
21 of the Water Cooling Tower Committee, speaking  
22 against the motion.

23           I have a great deal of respect for what  
24 Marcelo is trying to do in rather zealously defending  
25 the Glossary of Terms Task Group's work. But the

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 73

1 fundamental principals on which the Glossary of Terms  
2 Task Group was actually put together was to make sure  
3 that objects within the NFPA system that are the same  
4 have the same definitions.

5           And then the corollary to that fundamental  
6 premise is that objects that are different are  
7 allowed to have different definitions. And here we  
8 have a situation where an object is different. The  
9 fire resistant partition that we're talking about  
10 here for a water cooling tower is not the same as a  
11 fire resistant partition that you find in a building  
12 code or other places. The materials are not  
13 compatible that you use. You make this wall out of  
14 (indiscernible) versus what you put in a water  
15 cooling tower. So we appropriately have a different  
16 definition in water cooling towers than you would  
17 find for fire resistant partition in other places.

18           Now, Marcelo has brought up this issue of  
19 the Glossary of Terms. When the Glossary of Terms  
20 gets printed, he's thinking this is going to be some  
21 kind of a concern because it's going to reference  
22 some other piece of the standard. But that really  
23 isn't going to be a problem.

24           The purpose of the Glossary of Terms is not  
25 to pull things out of context from the documents that

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 74

1 they're actually drawn from. The point of the  
2 Glossary of Terms is to pull together this list and  
3 help people understand the differences between these  
4 different objects when they're put out there.

5           So it's completely appropriate for the Water  
6 Cooling Tower Committee to have written this  
7 standard. We are in keeping with the manual of style  
8 in that we're not putting the requirements in the  
9 definitions, but we're pointing people towards where  
10 they're going to find more information on how to make  
11 this fire resistant partition for the water cooling  
12 tower environment.

13           CHAIR FARR: Microphone 4, please.

14           MR. FISK: Thank you. I'm Bill Fisk of  
15 Intertech, and I'm speaking against the motion.

16           The maker of the motion stated, among other  
17 things, that it would be inappropriate to add in  
18 accordance with Section 4-9, as that would constitute  
19 a requirement as part of the definition.

20           Reading the existing definition, "a tight  
21 continuous partition." That contains a requirement.  
22 "Suitable for use in a cooling tower environment."  
23 That contains a requirement. "That has a fire  
24 resistance rating of 20 minutes or more." That's a  
25 requirement. So maybe by adding another thing,

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 75

1 that's making a bad situation worse. But I don't see  
2 that this makes it really any worse.

3 CHAIR FARR: Microphone 9, please.

4 MR. HAGUE: Thank you, Mr. Chairman. David  
5 Hague with Liberty Mutual Properties, speaking in  
6 favor of the motion on the floor.

7 The definition already does not meet the  
8 manual of style because it uses the word "suitable,"  
9 which is not intended for use in the main body of the  
10 document. It establishes a requirement by insisting  
11 on 20 minutes or more for a fire resistance rating.  
12 And as proposed in the comment, adding an index  
13 reference is not appropriate in the main body of the  
14 standard. That should be added in the annex of the  
15 document. So that is not consistent with the manual  
16 of style.

17 I don't believe the argument is related to a  
18 specific definition for fire resistant petition in a  
19 cooling tower. That is very specific. There's  
20 nothing wrong with that at all. But the definition  
21 overall does not meet the manual of style.

22 So, again, I would urge the membership to  
23 support the motion on the floor. Thank you.

24 CHAIR FARR: Microphone 5, please.

25 MR. HIRSCHLER: Marcelo Hirschler, GBH

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 76

1 International, for the Glossary Committee. I would  
2 point out I understand that this Committee wants to  
3 have a specific definition of "fire resistant  
4 partition." And it's very clear. It's a partition  
5 suitable for use in a cooling tower environment. But  
6 in accordance with Section 4.9, that is certainly a  
7 requirement. That is certainly something that cannot  
8 be discussed generically. It cannot be part of the  
9 definition. Please support this motion. Thank you.

10 CHAIR FARR: Microphone 4.

11 MR. SMITH: Bob Smith. I'm on Technical  
12 Committee 214. I just want to make one clarifying  
13 point. The Committee at the time and now also  
14 believes that this is acceptable to refer to this  
15 section in the definition. And we actually feel we  
16 are in compliance with the manual of style.

17 And, in fact, just looking up quickly, we  
18 found several references to NFPA 2009 Edition. 101  
19 has the same application when referencing within a  
20 definition, and as does NFPA 30, 2008 version or  
21 edition.

22 So we do feel that we were actually in  
23 compliance with the style and were very consistent in  
24 doing so.

25 CHAIR FARR: Thank you. Seeing no more

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 77

1     comments from the floor, Mr. Spencer, any final  
2     comments?

3             MR. SPENCER: I have nothing further,  
4     Mr. Chair.

5             CHAIR FARR: Seeing no further comments,  
6     before we vote, let me restate the motion. The  
7     motion on the floor is to reject Comment 214-1. All  
8     those in favor of the motion, please indicate by  
9     raising your hand. All those opposed to the motion,  
10    please indicate by raising your hand. Motion fails.  
11    Mr. Spencer, thank you.

12            MR. SPENCER: Thank you, Mr. Chair.

13            CHAIR FARR: The next report under  
14    consideration this morning is that of the Technical  
15    Committee on Road, Tunnel and Highway Fire  
16    Protection. Here to present the committee report is  
17    Committee Chair William Connell, of Americas,  
18    Incorporated, Boston, Massachusetts.

19            The Committee Report can be found in the  
20    blue 2010 Annual Revision Cycle ROP and ROC. The  
21    certified amending motions are contained in the  
22    Motions Committee Report and behind me on the screen.  
23    We will proceed in the order of the motion number as  
24    presented. Mr. Connell.

25            MR. CONNELL: Mr. Chair, ladies and

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 78

1 gentlemen, the report on the **Technical Committee on**  
2 **Road, Tunnel, and Highway Fire Protection** presented  
3 for adoption can be found in the Report on Proposals  
4 and Report on Comments of the 2010 Annual Revision  
5 Cycle.

6           The Technical Committee has published a  
7 report, and this is a partial revision to NFPA 502,  
8 standard for roads, tunnels, bridges and other  
9 limited access highways. The presiding officer will  
10 now proceed with the certified amending motions.

11           CHAIR FARR: Thank you, Mr. Connell. Let's  
12 now proceed with the discussion on the certified  
13 amending motion on NFPA 502. Microphone 5, please.

14           MR. HIRSCHLER: Marcelo Hirschler, GBH  
15 International, speaking for the American Fire Safety  
16 Council. And I move to accept Comment 502-23.

17           CHAIR FARR: Is there a second?

18           UNIDENTIFIED SPEAKER: Second.

19           CHAIR FARR: Thank you. We do have a  
20 second. Please proceed with the discussion on the  
21 motion.

22           MR. HIRSCHLER: Thank you, Mr. Chairman. If  
23 we don't make this change, the Committee is accepting  
24 wording that says "the materials shall be  
25 noncombustible in accordance with ASTM E-136," which

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 79

1 doesn't talk about noncombustibility, "or in  
2 accordance with an equal international standard,"  
3 which doesn't exist. So, in other words, if we don't  
4 change the wording, this cannot be complied with.

5           The Committee then made another change. And  
6 instead of "equal" said "equivalent internationally  
7 recognized standard," which again no one knows what  
8 that means.

9           There are throughout the world four  
10 standards that are used for assessing  
11 noncombustibility. And the only one of those that  
12 has passed the criteria is E-136, although it's not  
13 called noncombustibility. It's just used for  
14 noncombustibility using the criteria that I listed in  
15 here.

16           The other standards that exists throughout  
17 the world are E-2652, ISO-1182 and BS-476-4. None of  
18 these three have pass/fail criteria. So saying that  
19 it shall be noncombustible in accordance with  
20 anything else doesn't mean anything because there's  
21 no criteria in the standard.

22           And talking about an equivalent  
23 internationally recognizable standard, equivalent  
24 internationally recognized by whom? So that means  
25 that the authority having jurisdiction is going to

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 80

1 have to rely on someone saying, Oh, this standard  
2 that I found in Mongolia is equivalent. And I'm  
3 telling you what the criteria should be. This just  
4 cannot be enforced the way it is written.

5           So I have noted all four acceptable  
6 international standards that are used for this. ASTM  
7 E-136, ASTM E-2652, ISO 1182 and BS-476-4.

8           Just as an example, the International  
9 Maritime Organization also requires noncombustibility  
10 testing. What does it do? It says take ISO-1182 and  
11 use these criteria. This is the way you do things.  
12 And that way you'll get something consistent and  
13 everyone knows how to apply it. The language from  
14 the Committee is enforceable. Thank you.

15           CHAIR FARR: Mr. Connell, would you like to  
16 offer the Committee's position?

17           MR. CONNELL: Yes, I would, Mr. Chair.  
18 However, before I do address the motion before us,  
19 the Committee would like to take this opportunity to  
20 thank the proponent for his specific interest in the  
21 standard and the contributions his numerous proposals  
22 have made toward the strengthening of the document  
23 during the cycle.

24           NFPA 502 is dedicated to establish the fire  
25 protection requirements for significantly unique

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 81

1 facilities. That also poses challenges that are to  
2 life safety and property protection that are as  
3 equally unique.

4 By the very nature of the facilities that we  
5 deal with, these facilities maintain a transient and  
6 continuously changing occupancy and fire load such  
7 that the risk conditions to life safety and property  
8 protection are never constant, nor are they ever the  
9 same.

10 Also unique to our standard and a highly  
11 important focus of this Technical Committee is  
12 establishing and maintaining an international  
13 relevance and credibility. For example, the number  
14 of road and highway tunnels in the world, both  
15 existing and planned, are far more dominant in  
16 Europe, Asia and Australia than either here in the  
17 U.S. or North America.

18 The Technical Committee is specifically  
19 conscious of the need to develop standards and  
20 requirements that provide equal consideration to  
21 their international acceptance and recognition.

22 It is important to note that more than one  
23 third of the Technical Committee members are, in  
24 fact, international, representing seven different  
25 countries.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 82

1           During the cycle's ROP stage, 101 proposals  
2 were received, approximately one-third of which was  
3 specific to the subject of electrical power systems  
4 and components. The Electrical Power Task Group was  
5 formed within the Committee solely for the purpose of  
6 dealing and evaluating these related proposals.

7           In addition, because of the nature and  
8 complexity of certain of these proposals, it became  
9 necessary to recruit volunteer subject matter or  
10 experts from outside the Committee to aid the task  
11 group in assessing these specific proposals  
12 throughout the site.

13           As Committee Chair, I can state with all  
14 confidence based on a considerable amount of hours  
15 expended by the specific task group, these proposals  
16 received an extraordinarily diligent review,  
17 including the proper consideration of their  
18 international application and impact by qualified  
19 members and volunteers.

20           Finally, it should be realized that almost  
21 all proposals related were accepted either in part or  
22 principle, resulting in an entire rewrite and  
23 reorganization of the Electrical Systems chapter in  
24 502 that the Committee believes will serve  
25 significantly to strengthen the standard.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 83

1           Specific to the motion before us, the 502  
2 Committee unanimously rejected 502-3. Rather they  
3 tried to list all combustibility test standards. The  
4 Committee changed the definition of noncombustible  
5 material to state that the materials must pass ASTM  
6 136 or an equivalent international standard. This  
7 wording was proposed for use by the NFPA Advisory  
8 Committee on the glossary terminology.

9           CHAIR FARR: Thank you, Mr. Connell. With  
10 that, we will open up the debate on the motion.  
11 Please provide your name and affiliation and whether  
12 you are speaking in support or against the motion.  
13 Microphone 5.

14           MR. HIRSCHLER: Marcelo Hirschler, GBH  
15 International, for the American Fire Safety Council.  
16 I haven't heard anything to rebut what I said. The  
17 wording as proposed by the Technical Committee is  
18 impossible to enforce. It says, "It shall be  
19 noncombustible in accordance with an equivalent  
20 internationally recognized standard." There is  
21 nothing that demonstrates how to do that. That's why  
22 I proposed these four standards with the appropriate  
23 criteria.

24           And I want to point out that two of these  
25 standards are ASTM standards, which may or may not

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 84

1 be -- this is an international organization, but it  
2 certainly is heightened in the United States. But  
3 the other two standards, ISO 1182 and BS-476-4 are  
4 from organizations that are truly outside of the  
5 United States. ISO is located in Geneva. It's the  
6 international standard organization. BS is a British  
7 standards institution located in London, United  
8 Kingdom.

9 I heard nothing from the chairman that said  
10 that we can do anything with the wording that the  
11 Committee proposed. I urge you to support the motion  
12 on the floor. Thank you.

13 CHAIR FARR: Any further discussion on  
14 Motion 502-1? Microphone 8.

15 MR. O'CONNELL: Mr. Chairman, my name is  
16 Barry O'Connell. I'm with Tyco Thermal Controls.  
17 That's a company that makes fire resistant cable.

18 Dr. Hirschler may be correct in saying that  
19 those four standards are the only internationally  
20 recognized standards. That may be true today. I  
21 don't know. But probably it is not true tomorrow.  
22 What I believe to be the right way to do this and the  
23 way the Committee has done it is to put those  
24 standards in the annex and to put wording in the Code  
25 that says "equivalent internationally recognized

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 85

1 standards." So I would support the Committee's  
2 action, and I will vote against this motion.

3 CHAIR FARR: Thank you. Further comments  
4 from the floor? Mr. Connell, any comments?

5 MR. CONNELL: No.

6 CHAIR FARR: Seeing none, we will move to  
7 the vote. I'm sorry. Microphone 4.

8 MR. WALTON: My name is Ed Walton. I'm a  
9 consultant representing Draco Cable Company, which  
10 manufactures these fire resistant cables. I'm  
11 speaking against the acceptance.

12 As stated, the standard as accepted by the  
13 Committee would reference the ASTM 136 standard and  
14 an equivalent. There was nothing that I saw in any  
15 of the work that was submitted or my participation in  
16 this subject that showed that all of these standards  
17 covered all of the aspects and would be equivalent to  
18 ASTM 136. In other words, there was not any data to  
19 support that these standards were, in fact,  
20 equivalent. This should be left to the enforcement  
21 agency, whoever that happens to be, that is using  
22 this standard. Thank you.

23 CHAIR FARR: Microphone 5.

24 MR. HIRSCHLER: Marcelo Hirschler, GBH  
25 Internation, for the American Fire Safety Council. I

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 86

1 need to correct a statement by the Chairman when he  
2 said that the other standards were accepted for the  
3 annex. If you look at Comment 502-45, which we will  
4 discuss later, it was proposed to add this to the  
5 annex. And the Committee accepted in part and took  
6 out all the standards. So all the other standards  
7 are not in.

8           So the only way for the Committee to work  
9 with this either E-136 or some nebulous standard that  
10 no one knows what it is. Thank you.

11           CHAIR FARR: Final comments, Mr. Connell?

12           MR. CONNELL: Yes. And just as a  
13 clarification to that. As I stated prior, if the  
14 Committee did feel that rather than try to list all  
15 of the combustibility test standards, we rather  
16 settled on the change to the definition to state that  
17 materials must pass the E-136 or some equivalent  
18 international standard.

19           CHAIR FARR: Thank you. Seeing no further  
20 comments, we will move to the vote. Before we vote,  
21 let me restate the motion. The motion on the floor  
22 is to accept Comment 502-23. All those in favor of  
23 the motion, please indicate by raising your hand.  
24 Thank you. Those opposed please raise your hand.  
25 Motion fails. Let's now move on to Motion 502-2.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 87

1 Microphone 5.

2 MR. HIRSCHLER: Mr. Chairman, Marcelo  
3 Hirschler, GBH International, for the American Fire  
4 Safety Council. And I move to reject Comment 502-24.

5 CHAIR FARR: Is there a second for that  
6 motion? Thank you.

7 MR. HIRSCHLER: This is very similar to the  
8 previous motion. We have an equivalent  
9 internationally recognized standard. No one knows  
10 nor anyone having jurisdiction would recognize what  
11 an internationally recognized standard is. Thank  
12 you.

13 CHAIR FARR: Mr. Connell, would you like to  
14 comment?

15 MR. CONNELL: Yes, Mr. Chair. The motion,  
16 as the proponent mentions, is similar to the previous  
17 topic. Again, the 502 Committee gave diligent  
18 consideration to this proposal and unanimously voted  
19 against it. As previously stated, NFPA 502 is an  
20 internationally recognized and utilized standard.  
21 And the Committee feels it's very difficult to  
22 identify every possible international test. And,  
23 therefore, the wording "equivalent internationally  
24 recognized standard" is being adopted to allow for  
25 international tests that are considered equivalent

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 88

1 without the compromise of safety.

2 CHAIR FARR: Thank you, Mr. Connell. With  
3 that, we will open up debate on the motion. Please  
4 provide your name and affiliation and whether you are  
5 speaking in support of or against the motion. Any  
6 further comments, Mr. Connell, from you?

7 MR. CONNELL: None, Mr. Chair.

8 CHAIR FARR: Seeing none, we'll move to the  
9 vote. Before we vote, let me restate the motion.  
10 The motion on the floor is to reject Comment 502-24.  
11 All those in favor of the motion, please indicate by  
12 raising your hand. Those opposing the motion, raise  
13 your hand. Motion fails. We will now move on to  
14 motion 502-3. Microphone 5, please.

15 MR. HIRSCHLER: Thank you, Mr. Chairman.  
16 Marcelo Hirschler, GBH International, for the  
17 American Fire Safety Council. And I move to accept  
18 Comment 502-32.

19 CHAIR FARR: Is there a second to Motion  
20 502-32? We do have a second. Please proceed with  
21 the discussion.

22 MR. HIRSCHLER: Now we're moving to a  
23 different issue associated with cables. And tunnels  
24 are very similar in the number of occupants covered  
25 in the National Electrical Code.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 89

1           So what I have done in this proposal is take  
2 the exact wording from the National Electrical Code  
3 so that we don't have this thing about other  
4 equivalent international standards approved by the  
5 AHA. We have the appropriate wording with the  
6 appropriate standard.

7           And in reference to the use of international  
8 authorities, you will note that 132-2 says that it  
9 can be tested in accordance with an alternate test  
10 approved by the AHJ, whatever the alternate test is.  
11 And that's up to the AHJ. So what are the options  
12 for putting cables in emergent circuits? The other  
13 can be circuit integrity cables, which is the same as  
14 what the Technical Committee says. Except the  
15 Technical Committee says that circuit integrity cable  
16 has to be installed to reach a conduit, or it can be  
17 an electrical protective circuit with a two-hour  
18 rating by whatever test it is, for example, a test  
19 approved by the AHJ. Or it can be protected by a  
20 fire resistant barrier with a minimum two-hour fire  
21 resistant rating. So that gives you the appropriate  
22 protection. Or it can be protected by a fire  
23 assembly with a minimum fire resistant rating of two  
24 hours. Or it can be embedded into at least 2 inches  
25 of concrete so there is all the significant

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 90

1 protection against impact, which has been the key  
2 problem in tunnels. And it is consistent with other  
3 requirements for emergency circuits in the National  
4 Code. Thank you.

5 CHAIR FARR: Thank you. Mr. Connell?

6 MR. CONNELL: Yes, Mr. Chair. Again, the  
7 Committee considered this proposal and unanimously  
8 disagreed with the submitter on this. The wording  
9 was chosen by the Committee to specifically address  
10 what we believe are, in fact, unique conditions to  
11 road tunnels. Where fire rating methods to the NEC,  
12 they are not always applicable for a tunnel  
13 environment.

14 For example, a thermal barrier and many of  
15 the fire resistant assemblies are not suitable for a  
16 continuously wet environment. Additionally,  
17 specifying the concrete thickness is not required so  
18 long as the protection of the circuits by the  
19 concrete is able to achieve a minimum of two-hour  
20 fire resistance rating.

21 The Committee revised the term "cables and  
22 emergency circuits" to "emergency circuits" because  
23 the protection must be for the entire circuit and not  
24 just the cables. The circuits as a whole must remain  
25 functional in order to perform their intended

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 91

1 function.

2 CHAIR FARR: Thank you, Mr. Connell. With  
3 that, we will open up the debate on the motion.  
4 Please provide your name and affiliation and whether  
5 you are speaking in support of or against the motion.  
6 Microphone 4.

7 MR. WALTON: Chairman, Edward Walton,  
8 Consultant, Draco Cables, which manufactures these  
9 fire resistant cables for buildings, transit systems,  
10 and tunnels. And I would just like to reiterate that  
11 a tunnel is --

12 CHAIR FARR: You're speaking?

13 MR. WALTON: I'm speaking against the  
14 motion.

15 CHAIR FARR: Thank you.

16 THE WALTON: And the tunnel offers a very  
17 unique situation for fire resistant cables. These  
18 requirements should not just be standardized across  
19 different occupancies.

20 CHAIR FARR: Thank you. Further discussion?  
21 Microphone 5.

22 MR. HIRSCHLER: Marcelo Hirschler, GBH  
23 International, American Fire Safety Council, in  
24 support of the motion.

25 Just to clarify. All the requirements for

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 92

1 the appropriate fire protection and for the  
2 appropriate physical protection are included in the  
3 options included here. It just avoids the language  
4 that is really a problem of gathering equivalent  
5 international standards. That is a language that is  
6 not enforceable. Thank you.

7 CHAIR FARR: Microphone 8.

8 MR. O'CONNELL: Mr. Chairman, Barry  
9 O'Connell. This 502 --

10 CHAIR FARR: You're speaking in favor or  
11 against?

12 MR. O'CONNELL: I beg your pardon. I'm  
13 speaking against the motion. The 502 standard is  
14 going to be utilized internationally to take the NEC  
15 tests for fire resistance, and to impose those on a  
16 completely different environment does not make much  
17 sense, particularly in a Committee where the  
18 representation internationally is as strong as it is.

19 It makes much more sense to open it up for  
20 international tests. I believe that's what the  
21 Committee has done. I support the Committee and vote  
22 against the motion.

23 CHAIR FARR: Microphone 5.

24 MR. HIRSCHLER: Marcelo Hirschler, GBH  
25 International, American Fire Safety Council, in

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 93

1 support of the motion.

2 I just want to point out in response to the  
3 last statement, the only test referenced in the  
4 proposed text that I have submitted and in the text  
5 that the Committee proposed are one in the same. I  
6 haven't added any U.S. test that the Committee didn't  
7 already have.

8 The only test is ANSI UL-2196, both in my  
9 comment and in the Committee text. The difference is  
10 the other requirements. And this is really confusing  
11 language, "other equivalent internationally approved  
12 standards by the AHJ." Thank you.

13 CHAIR FARR: Mr. Connell, final comments?

14 MR. CONNELL: None, Mr. Chair.

15 CHAIR FARR: Seeing none with respect to  
16 comments, we will move to the vote. Before we vote,  
17 let me restate the motion. The motion on the floor  
18 is to accept Comment 502-32. All those in favor of  
19 the motion, please indicate by raising your hand.  
20 Those opposed to the motion, same. Motion fails.

21 We now move to Motion 502-4. Microphone 5,  
22 please.

23 MR. HIRSCHLER: Marcelo Hirschler, GBH  
24 International, for the American Fire Safety Council.  
25 And I move to reject an identifiable part of Comment

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 94

1 502-33.

2 CHAIR FARR: Is there a second? Thank you.  
3 Continue.

4 MR. HIRSCHLER: Again, what we're talking  
5 about here is to try to avoid problems for the  
6 authority having jurisdiction by removing the term  
7 "other equivalent international standards." That's  
8 all this does. Thank you.

9 CHAIR FARR: Mr. Connell, would you like to  
10 offer the Committee's position?

11 MR. CONNELL: Yes, Mr. Chair. Again the  
12 theme is recurring, the international impact that  
13 this particular standard has, as well as the  
14 participants on the Committee.

15 The Committee recognizes -- and it's  
16 important that we do -- other countries that utilize  
17 and rely on the standard do not test cable  
18 necessarily to UL 2196 standards. And their  
19 standards, in fact, do not test cable to temperatures  
20 up to 1010 C as required under 2196. In fact, they  
21 only test to 950 C. Therefore, the 502 Committee  
22 changed the requirement to 950 C.

23 CHAIR FARR: Thank you, Mr. Connell. That  
24 will open up debate on the motion. State whether you  
25 are in favor of or against the motion.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 95

1           MR. HIRSCHLER: Marcelo Hirschler, GBH  
2 International, American Fire Safety Council. I want  
3 to point out, if you look at your salmon handout,  
4 option one is go to UL 2196. Option two is going to  
5 other equivalent international standards approved by  
6 the AHJ.

7           What's being taken out is "equivalent  
8 internationally recognized," which is a confusing  
9 term that doesn't do anything. By accepting the  
10 motion, you take out the language that doesn't mean  
11 anything. You don't take out the option for everyone  
12 in any other country, including the seven countries  
13 represented on the Technical Committee, to conduct  
14 any other test. And I'll leave it at that.

15           CHAIR FARR: Any further comments on Motion  
16 502-4. Mr. Connell, any comments?

17           MR. CONNELL: None, Mr. Chair.

18           CHAIR FARR: Seeing none, we'll move to a  
19 vote. Before we vote, let me restate the motion.  
20 The motion on the floor is to reject an identifiable  
21 part of Comment 502-33. All those in favor of the  
22 motion, indicate by raising your hand. Those  
23 opposed, indicate by raising your hand. The motion  
24 fails. At this time we will move on to Motion 502-5.  
25 Microphone 5, please.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 96

1           MR. HIRSCHLER: Marcelo Hirschler, GBH  
2 International, for the American Fire Safety Council.  
3 I move to accept Comment 502-35.

4           CHAIR FARR: Thank you. Is there a second  
5 for that motion? Thank you. We do have a second.  
6 Please proceed with the discussion.

7           MR. HIRSCHLER: What we're talking about  
8 here is the permission to recognize other standards  
9 other than just the UL 1685. We're again having this  
10 problem with the Committee's wording "wires and  
11 cables tested to equivalent internationally  
12 recognized standards approved by the AHJ." We keep  
13 having this problem.

14           Instead of that, the way the comment is  
15 worded, it accepts the standards that are included in  
16 the National Code and also accepts 1121.33, Standard  
17 EN 503.99, which is the test that is used throughout  
18 the European union for trade cables and everything  
19 above that. There is no other international standard  
20 for cables. These are the only three standards for  
21 cables.

22           So these are the only three standards that  
23 will address the vertical progression of fire in a  
24 cable train. You have no other options. So talking  
25 about other equivalent international standards, just

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 97

1    like we were talking about the noncombustibility,  
2    there aren't any.  I heard one speaker say before,  
3    "Maybe sometime in the future there will be a new  
4    one."  Well, sometime in the future, there will be a  
5    new edition of 502, and we will incorporate the new  
6    ones.  But we need to put in what is there now.  What  
7    is there now is we have the standards from UL and  
8    NFPA and we have the standard that is used for the  
9    European union with the appropriate criteria.  Please  
10   accept the motion.

11           CHAIR FARR:  Mr. Connell, would you like to  
12   offer the Committee's position.

13           MR. CONNELL:  Yes, Mr. Chair.  The motion as  
14   considered by the Committee would limit the choice of  
15   international test standards to the one European  
16   standard, 503.99.  The Committee felt the action  
17   would allow latitude in the international community  
18   to select that equivalent standard, not to dictate  
19   one specific standard, such as 503.99.  Thanks.

20           CHAIR FARR:  Thank you.  With that, we will  
21   open up debate on the motion.  Please provide your  
22   name and affiliation and whether you are speaking in  
23   support of or against the motion.

24           MR. HIRSCHLER:  Marcelo Hirschler, GBH  
25   International, American Fire Safety Council, in

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 98

1 support of the motion.

2           There is no other international standard.  
3 The European union, IEC, adopts these standards. The  
4 IEC has adopted this standard. It has been modified  
5 and improved by EN 503.99. That is the standard that  
6 is applicable throughout the European union, which is  
7 where most of the international members of this  
8 Committee are. Or we have the standards that are  
9 invoked in the U.S. There are no other standards.  
10 So trying to impose some mythical standard that will  
11 be developed in two or three years when we're going  
12 to get the next edition of 502, just makes no sense.  
13 We know the standards that exist for testing cables  
14 and those are them.

15           CHAIR FARR: Thank you. Microphone 4,  
16 please.

17           MR. FISK: Thank you, chairman. I'm Bill  
18 Fisk of InterTech. And I am a member of the U.S.  
19 National Committee of IBC and, more specifically, the  
20 Technical Management Committee, which deals with the  
21 standardization side of IBC. And I am the group  
22 manager for several U.S. tags, including the U.S. tag  
23 TC-15, that is responsible for the wire and cable  
24 standards in the IBC. And what I have heard over and  
25 over --

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 99

1 CHAIR FARR: You're speaking?

2 MR. FISK: I'm sorry. I am speaking in  
3 opposition to the motion.

4 CHAIR FARR: Thank you.

5 MR. FISK: And what I have heard over and  
6 over here is that there is no international standard  
7 at present. This is true. But it also seems to make  
8 the assumption that TC 15 is totally inactive. And I  
9 can tell you for absolutely certain that TC 15 is  
10 very active.

11 CHAIR FARR: Further discussion?  
12 Microphone 5.

13 MR. HIRSCHLER: Marcelo Hirschler, GBH  
14 International, American Fire Safety Council. I'm  
15 sorry to belabor the issue. The gentleman just made  
16 my appointment.

17 CHAIR FARR: You're speaking?

18 MR. HIRSCHLER: I'm speaking in favor of the  
19 motion. The gentleman just made my point. Yes, IC  
20 TC-15 is very active, but they don't have another  
21 standard. So if those are the only ones that exist,  
22 why are we putting in here something if someone is  
23 going to develop a new one? That's for the next  
24 edition of 502, not put something in in expectation  
25 that sometime a new one will come in.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 100

1           CHAIR FARR: Further discussion from the  
2 floor?

3           MR. O'CONNELL: Mr. Chairman, Barry  
4 O'Connell with Tyco Thermal Controls. I just want to  
5 make a point, Mr. Chairman, that if this motion were  
6 to succeed --

7           CHAIR FARR: You're speaking.

8           MR. O'CONNELL: I'm speaking against the  
9 motion. I apologize. I just want to make a point  
10 that if this motion were to succeed, it would require  
11 wiring and cable to pass all three fire and smoke  
12 tests that are here, and that would be far too  
13 restrictive.

14           CHAIR FARR: Thank you. Further discussion  
15 from the floor? Mr. Connell, no further comments?

16           MR. CONNELL: No further comments,  
17 Mr. Chairman.

18           CHAIR FARR: Thank you, Mr. Connell. Seeing  
19 no further discussion, before we vote, let me restate  
20 the motion. The motion on the floor is to accept  
21 Comment 502-35.

22           All those in favor of the motion, please  
23 indicate by raising your hand. Those opposed, same  
24 thing. Motion fails. We will now move on to Motion  
25 502-6. Microphone 5, please.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 101

1           MR. HIRSCHLER: Marcelo Hirschler, for the  
2 American Fire Safety Council. I move to reject an  
3 identifiable part of the Committee's accepted part of  
4 502-35.

5           CHAIR FARR: You've heard the motion to  
6 reject an identifiable part of Comment 502-35. Is  
7 there a second? Thank you. There is a second.  
8 Please proceed.

9           MR. HIRSCHLER: Again, what we're talking  
10 about is eliminating the phrase "equivalent  
11 internationally recognized standards." Thank you.

12          CHAIR FARR: Mr. Connell?

13          MR. CONNELL: Yes, Mr. Chair. Again, 502 is  
14 certainly established here. The Committee feels it  
15 is very difficult to identify every equivalent  
16 international test. Therefore, the words "equivalent  
17 internationally recognized standard" has been added  
18 to allow other tests without compromising the safety  
19 and intent of the document.

20          CHAIR FARR: Thank you, Mr. Connell. With  
21 that, we will open up the debate on the motion.  
22 Please provide your name and affiliation and whether  
23 you are speaking in support of or against the motion.  
24 Seeing no further discussion, before we vote, let me  
25 restate the motion. The motion on the floor is to

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 102

1 reject an identifiable part of Comment 502-35.

2 All those in favor of the motion, please  
3 indicate by raising your hand. Those opposed to the  
4 motion, please raise your hands. Motion fails.

5 We'll now move on to motion 502-7. Microphone 5.

6 MR. HIRSCHLER: Marcelo Hirschler, GBH  
7 International, American Fire Safety Council. I move  
8 to accept Comment 502-36.

9 CHAIR FARR: There's a motion on the floor  
10 to accept Comment 502-36. Is there a second?

11 UNIDENTIFIED SPEAKER: Second.

12 CHAIR FARR: Thank you. There is a second.  
13 Please proceed.

14 MR. HIRSCHLER: This is similar to the  
15 motion on 502-35 except that it eliminates the issue  
16 about acid gases. And let me just point out that in  
17 spite of what was stated by a previous speaker, this  
18 does not require you to pass all three tests. It  
19 says you pass one or you pass the second one instead  
20 of 2131, or you pass the third one instead of 2131.

21 And again let me point out that what we need  
22 to do is stay with the tests that exists, not future  
23 tests. There are no future tests. The standards are  
24 living documents. And we need to retain what is a  
25 living document.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 103

1           This is different from the previous motion  
2     in that this recognizes that there is no need to band  
3     particular materials. Thank you.

4           CHAIR FARR: Mr. Connell, would you like to  
5     offer the Committee's position?

6           MR. CONNELL: Yes, Mr. Chair. As the  
7     proponent mentions, this motion is duplicative of Log  
8     689 with the added deletion of the requirements for  
9     acid gas testing.

10           NFPA 502 has always had the requirement for  
11     the amount of acid gas in roads, tunnels, and other  
12     confined environments. It is universally recognized  
13     that cable combustion by-products include acid gas.  
14     In the context of a closed environment, the effects  
15     can result in a degree of incapacitation. The  
16     Committee felt that elimination of the requirement  
17     could affect the motorist's ability to safely  
18     evacuate tunnels in case of a fire emergency.

19           CHAIR FARR: Thank you, Mr. Connell. With  
20     that, we will open up debate on the motion. Please  
21     provide your name and affiliation and whether you are  
22     speaking in support of or against the motion.  
23     Microphone 5.

24           MR. HIRSCHLER: Marcelo Hirschler, GBH  
25     Internation, American Fire Safety Council, for the

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 104

1 motion.

2 I just want to point out that these are not  
3 cables that are exposed in the tunnel, but they are  
4 in the controls of the tunnel. So they should comply  
5 with the same kind of concerns. And the primary  
6 concern is low smoke and low flame spread and low  
7 heat release. These are not cables that are inside  
8 the tunnel itself for the motorists to be exposed to.  
9 Thank you.

10 CHAIR FARR: Any further discussion on  
11 Motion 502-7 from the floor? Mr. Connell, further  
12 comments?

13 MR. CONNELL: None, Mr. Chair.

14 CHAIR FARR: Seeing no further discussion,  
15 before we vote, let me restate the motion. The  
16 motion on the floor is to accept Comment 502-36. All  
17 those in favor of the motion, please indicate by  
18 raising your hand. Those opposed please indicate by  
19 raising your hand. Motion fails. We will now move  
20 to Motion 502-8. Microphone 5, please.

21 MR. HIRSCHLER: Marcelo Hirschler, GBH  
22 International, for American Fire Safety Council. I  
23 move to accept Comment 502-45.

24 CHAIR FARR: Thank you. There's a motion to  
25 accept Comment 502-45. Is there a second? Thank

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 105

1 you. Please proceed with the discussion.

2 MR. HIRSCHLER: This is doing what the  
3 Chairman says the Committee already did but didn't  
4 do. This is recognizing that there are three other  
5 international standards that can be used for  
6 determining noncombustibility.

7 So if the Chairman is right, that that's  
8 what the Committee wanted to do and didn't do, then  
9 he should support this motion. All this does is add  
10 as an annex note to the definition of noncombustible  
11 materials the other standards. Thank you.

12 CHAIR FARR: Thank you. Mr. Connell, would  
13 you like to offer the Committee's position?

14 MR. CONNELL: Yes, Mr. Chair. The Committee  
15 accepted ROC Proposal 502.5 in part, but decided to  
16 omit this test standard as the Committee has not had  
17 the opportunity to become familiar with the new ASTM  
18 E-2652, but notes that the current wording of the  
19 clause A-3.3.31 allows the use of equivalent  
20 standards.

21 As such the Committee felt more comfortable  
22 deferring the inclusion of ASTM E-2652 into the annex  
23 clause A-3.3.31. So our next cycle will allow  
24 adequate time to better understand its applicability.

25 CHAIR FARR: Thank you, Mr. Connell. With

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 106

1 that, we will open up the debate on the motion.  
2 Please provide your name and affiliation and whether  
3 you are speaking in support of or against the motion.  
4 Microphone 5, please.

5 MR. HIRSCHLER: Marcelo Hirschler, GBH  
6 International, American Fire Safety Council. ASTM  
7 E-2652 is identical to ISO 1182. Let me repeat.  
8 ASTM E-2652 is identical to ISO 1182.

9 We have a letter from the secretary general  
10 ISO accepting ASTM's permission to reproduce ISO 1182  
11 except for the boilerplate and write it up so that it  
12 can be used in U.S. codes and standards. We have a  
13 letter from Jim Thomas, the president of ASTM,  
14 accepting that the Committee E-5 develop ASTM E-2652.  
15 E-2652 passed through the verbal processes of ASTM.  
16 It is a standard that is identical to ISO 1182.

17 And let me point out one more thing.  
18 Although the Committee accepted in part the standard,  
19 they rejected everything that was in the comment. So  
20 I urge the members to accept the comment. Thank you.

21 CHAIR FARR: Thank you. Further discussion,  
22 Mr. Connell?

23 MR. CONNELL: Just again I think in the case  
24 of this particular proposal, simply the Committee  
25 does not doubt the identical information or

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 107

1 requirements within E-2652. The only concern that we  
2 have is we had not had the opportunity to have seen  
3 that. It is, in fact, a new standard and was simply  
4 deferring us for re-review in our next cycle.

5 CHAIR FARR: Thank you. Further discussion  
6 on the Motion 502-8 to accept Comment 502-45? Seeing  
7 none, we will move to the vote.

8 Before we vote, let me restate the motion on  
9 the floor. The motion on the floor is to accept  
10 Comment 502-45. All those in favor of the motion,  
11 please indicate by raising your hand. Those opposed,  
12 same sign. Motion carries. Any further discussion?

13 MR. CONNELL: No, Mr. Chair.

14 CHAIR FARR: Mr. Connell, thank you very  
15 much for your time.

16 Before we begin the next document, I would  
17 like to introduce Carey Bell, member of the Standards  
18 Council, who will be the presiding officer over NFPA  
19 505 and NFPA 70. Thank you.

20 CHAIR BELL: Thank you very much, Ron. And  
21 good morning, ladies and gentlemen.

22 The next document, **NFPA 505**, appeared on our  
23 agenda. However, no one has signed in to make a  
24 certified amending motion on this document.

25 Therefore, in accordance with NFPA regulations, the

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 108

1 document will not be considered at this meeting and  
2 instead becomes a content document that will be  
3 forwarded directly to the Standards Council for  
4 issuance or other action.

5 We would like to thank the Committee for the  
6 work on this document, and we will now move onto the  
7 next document.

8 The last report under consideration this  
9 morning and perhaps this afternoon is that of the  
10 **Technical Correlating Committee for the National**  
11 **Electrical Code**. Here to represent the Committee is  
12 Technical Correlating Committee Chair James Carpenter  
13 of the International Association of Electrical  
14 Inspectors located in Durham, North Carolina.

15 The Committee report can be found in the  
16 peach 2010 Annual Revision Cycle ROP and ROC. The  
17 certified amending motions are contained in the  
18 Motions Committee report and behind me here on the  
19 screen.

20 We have several National Electrical Code  
21 chairs that will be stepping down due to the ten-year  
22 policy. They are James Carpenter, Technical  
23 Correlating Committee; Raymond Weber, Panel 2; Julian  
24 Burns, Panel 8; Wayne Brinkmeyer, Panel 11; Donald  
25 Tonka, Panel 15; Ron Janikowski, Panel 16; Don

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 109

1 Johnson, Panel 17; and Michael Burr, Panel 18. I  
2 would like to express our sincere thanks to these  
3 gentlemen for their excellent leadership on these  
4 panels.

5 Mr. Carpenter, would you like to present the  
6 TCC Chair's report.

7 MR. CARPENTER: Mr. Chair, ladies and  
8 gentlemen, let me take this opportunity to thank  
9 several groups and individuals. This is my last time  
10 to serve you as your NEC TCC chairman. My tenure has  
11 been one of not only challenges for the TCC, but also  
12 one of accomplishments. These accomplishments, which  
13 I must say have been as a result of the many  
14 dedicated members of the Technical Correlating  
15 Committee who have served many hours to assure that  
16 the documents in the TCC's care are met with the high  
17 standards of NFPA. It's been a pleasure and honor to  
18 serve with them.

19 The Chairs of the NEC code-making panels has  
20 also been a great source for making all the editions  
21 of the NEC a world-recognized document for the safe  
22 use of electricity. The many code-making panel  
23 members who have worked tirelessly in making the NEC  
24 a truly consensus document. Yes, even the public  
25 which comes forth with the many proposals and

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 110

1 comments, all of these groups have made my time as  
2 the TCC chair an exciting and rewarding time. In  
3 this cycle for the 2011 Edition of the NEC, there  
4 were 5,016 proposals, the most proposals since the  
5 1999 edition. There were 2910 comments, the least  
6 since before the 1999 edition.

7           And today this body will address only 22  
8 certified amending motions, merely one-third the  
9 number of the certified amending motions from the  
10 last cycle. Way to go, panel members, chairs and  
11 TCC. I would be remiss if I did not thank Mark  
12 Hurley and his staff at NFPA for the much needed  
13 support and guidance over the past ten years. Thank  
14 you, guys and gals, and especially the code queen  
15 Jean O'Connell.

16           Mr. Chair, ladies and gentlemen, the Report  
17 of the Technical Correlating Committee on the  
18 National Electrical Code is presented for adoption  
19 and can be found in the Report on Proposals and  
20 Report on Comments for the 2010 Annual Meeting  
21 Revision Cycle.

22           The Technical Correlating Committee has  
23 published a report consisting of a partial revision  
24 of NFPA 70 National Electrical Code. The presiding  
25 officer will now proceed with the certified amending

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 111

1 motions.

2 CHAIR BELL: Thank you, Mr. Carpenter. We  
3 will now proceed with the motions on NFPA 70 in the  
4 order of the motion sequence presented in the report.

5 But before we do that, I did want to make a  
6 comment about getting key information on the record.  
7 I know that when you come to the microphone, you have  
8 a lot of things on your mind. But it's very  
9 important that we get your name, affiliation, and a  
10 statement of whether you're speaking for or against  
11 the motion on the floor.

12 So what I'd like to do here is provide a  
13 challenge to you. Let's see if we can have ten  
14 speakers come to the microphone consecutively and  
15 state your name, affiliation, and whether or not  
16 you're speaking for or against the motion on the  
17 floor. And if we do that, we'll probably set a  
18 record. Linda is going to keep track, and we're  
19 going to see if we can set a record here for the NEC.  
20 Is there a motion on Sequence Number 70-1?

21 MR. MANCHE: My name is Alan Manche, and I'm  
22 the submitter of 70-1. I am associated with Square D  
23 Company and Schneider Electric.

24 CHAIR BELL: Do you have a motion?

25 MR. MANCHE: I do. I would like to move to

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 112

1 reject an identifiable part of Comment 1-101.

2 CHAIR BELL: Okay. The motion on the floor  
3 is to reject an identifiable part of Comment 1-101.  
4 Please proceed.

5 MR. MANCHE: The text that we're seeking to  
6 remove is the last five words of the information that  
7 was newly put into the document that is presented on  
8 the screen. The last five words are, "and the  
9 numbers of strands."

10 Now, the new text accurately seeks to  
11 provide some information with regards to termination  
12 compatibility with the stranding of conductors. So  
13 the information that's been put together here by the  
14 code panel is accurate and good.

15 These additional words, though, are  
16 redundant. So what we end up with is a class of  
17 stranding, and then we end up marking the number of  
18 strands. So there's really no need to have the class  
19 marking and the number of strands marked on the  
20 terminal.

21 So this simply seeks to simplify it to the  
22 class of strands. The table will remain in the annex  
23 or in Table 10 in Chapter 9. So the folks need to  
24 look at the stranding of the conductor and understand  
25 the compatibility with the class marking on the

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 113

1 terminal that can be done. So I just seek your  
2 support for this NITMAM.

3 CHAIR BELL: Thank you, Mr. Carpenter.

4 MR. CARPENTER: I would like to defer to  
5 Neil Labrach of Code-making Panel 4.

6 MR. MANCHE: Thank you, Chair. Neil  
7 Labrach. I'm a principal member of Code-making  
8 Panel 1. And I'm speaking on the record for Panel 1  
9 to the issue in opposition to the motion on the  
10 floor.

11 The motion incorrectly identifies Section  
12 110.14A. The action taken by Code-making Panel 1  
13 moved the recommended Comment 1-101 to the parent  
14 paragraph of 110.14 following the existing paragraph.

15 Code Panel 1 received three proposals. They  
16 were 1-148, 1-149, and 1-151 for the record. They  
17 recommend text be placed in 110.14 to address the  
18 termination of fine stranded conductors. Code Panel  
19 1 recognized these rules are already enforceable  
20 under 110.3B but concluded that specific text in  
21 Article 110 would be useful to the code user.

22 With 12 members eligible to vote, the ballot  
23 results for all three proposals were 11 affirmative  
24 and one negative. The statement accompanying the  
25 negative vote raised the issue of how would the code

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 114

1 user define "fine stranded." As a result of that  
2 statement of negative vote, Code Panel 1 received  
3 three comments -- 1-100, 1-101 and 1-102 -- proposing  
4 various means of identifying "fine stranded."  
5 Comment 1-100 recommended the substance of 1-148,  
6 which identified these conductors as more finely  
7 stranded than Class B and Class 3 conductors for  
8 copper.

9           Comment 1-101, which is the subject of this  
10 certified amended motion, recommended adding text to  
11 110.14 and a table to Chapter 9. The proposed table  
12 and text is consistent with 10.12 of UL 486 A-B. And  
13 Code Panel 1 voted 11 affirmative and one negative to  
14 accept in principle Comment 1-101.

15           Code Panel 1 placed the recommended text in  
16 110.14 because it pertains to electrical connections  
17 generally. The number of strands was not  
18 specifically addressed during these proceedings but  
19 later raised in the voting statement of the only  
20 negative vote, which pointed out that ANSI class  
21 designations include more than one stranding count.

22 Thank you very much.

23           CHAIR BELL: Thank you. Further discussion?  
24 Microphone 5.

25           MR. MCKLOWSKI: Vince McKlowski, National

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 115

1 Electrical Manufacturers Association, speaking in  
2 support of the motion. Mr. Chairman, NEMA does  
3 support the motion. Thank you.

4 CHAIR BELL: Microphone 1.

5 MR. ODEE: My name is Mark Odee. I  
6 apologize for my voice. I'm in the process of losing  
7 it or getting it back. I'm not sure which. But I  
8 work for Underwriters Laboratories, and I'm in  
9 support of the motion.

10 UL 46A and 46B already require that the  
11 class of stranding be marked on the connector. Plus,  
12 a new Table 10 added to Chapter 9 of the NEC contains  
13 this same information. Requiring the connector to be  
14 marked with all the number of strands permissible  
15 would be unrealistic since often this would amount to  
16 many different markings such that the connector would  
17 not be large enough for that marking.

18 The idea is that the information should be  
19 available. And it is. And if I have a Class A or  
20 Class B or Class C marking, I can go back to the  
21 Chapter 9, Table 10, and it provides me with that  
22 information. Marking it on the actual connector  
23 would be unreasonable.

24 CHAIR BELL: Thank you. Microphone 7.

25 MR. MERCERE: Dave Mercere with Southware

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 116

1 speaking in favor of the motion. As a wire and cable  
2 manufacturer, we have a multiple number of strands  
3 that we use for specific classes. It would be a  
4 great effort for us to go through and add this to our  
5 wire and cable products and not add anything to the  
6 user. It would only confuse the user to see  
7 different strand counts for the same class.

8 CHAIR BELL: Thank you. Any additional  
9 comments, Mr. Carpenter?

10 MR. CARPENTER: No.

11 CHAIR BELL: Seeing no one else at the  
12 microphone, we'll move to the vote on the motion to  
13 reject an identifiable Part of Comment 1-101.

14 All those in favor of the motion, please  
15 raise your hand. All those opposed. Motion carries.  
16 Is there a motion related to Motion Sequence Number  
17 70-2?

18 MR. MANCHE: Alan Manche, Schneider Electric  
19 and Square D. I'm the submitter of 70-2.

20 CHAIR BELL: Do you have a motion?

21 MR. MANCHE: I'm going to return a portion  
22 of the report in the form of Proposal 1-183 and to  
23 related Comments 1-114 through 1-125.

24 CHAIR BELL: The motion on the floor is to  
25 return a portion of the report in the form of

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 117

1 Proposal 1-183 and related Comments 1-114 through  
2 1-125. Is there a second?

3 UNIDENTIFIED SPEAKER: Second.

4 CHAIR BELL: Please proceed.

5 MR. MANCHE: This section that is brand-new  
6 to the National Electric Code for this edition would  
7 require the marking of the maximum available fault  
8 current on the surface equipment. So you have to  
9 look at what the ramifications of putting that  
10 marking on or requiring that marking does or what  
11 value that marking has over the time or the lifetime  
12 of the marking remaining on the equipment.

13 And so what I would like to pose to you is  
14 that actually looking at that maximum available  
15 current, could it overbuild the system? Could it  
16 require us to overbuild the system? What do you use  
17 for the maximum number? Do I use what the utility  
18 provides me in their handouts? I would get a number  
19 from the utility company. Can I use the actual  
20 numbers on the transformer for the utility to  
21 actually calculate and establish what the maximum is,  
22 even though the utility gave me a larger number? Can  
23 I reduce that number to something less than that? I  
24 then put that marking on the equipment. And is that  
25 accurate over the continuous life while that

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 118

1 equipment is in place?

2           What I'd also like to propose to you is that  
3 this proposal was seeking to revise the language to  
4 coordinate 70E in the NEC with regard to personnel  
5 protection. They were actually looking for the  
6 actual available fault current, not the maximum  
7 available fault current. So if a worker goes to the  
8 equipment and looks at the maximum number and chooses  
9 to use that as a number to relate to us what he's  
10 going to put on to work on that, his protective gear,  
11 he can be fooled and actually put at risk by using  
12 that number.

13           So the value of that number and what it's  
14 going to be used for down the road, is it accurate  
15 the next day when someone wants to add another  
16 circuit to that panel, is completely in question.  
17 The person that's either going to do work on the  
18 equipment or add equipment to it needs to do due  
19 diligence to understand if the equipment has been  
20 changed or any available fault current changes have  
21 happened. They need to make sure that safety for the  
22 equipment and safety for the person is in place. So  
23 I urge you to vote in support of this NITMAM.

24           CHAIR BELL: Thank you, Mr. Carpenter.

25           MR. CARPENTER: Thank you. I'd like to

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 119

1 defer to the Code-making Panel 1 chair, Gil Manese.

2 And I think he's at the center mike in the back. I

3 can't see the number.

4 CHAIR BELL: Microphone 8.

5 MR. MANESE: Thank you, Mr. Chairman. My  
6 name is Gil Manese. I represent National Electrical  
7 Manufacturers Association. And I have the honor and  
8 privilege to serve as the Chairman of Code Panel 1.

9 CHAIR BELL: Are you speaking for or against  
10 the motion on the floor?

11 MR. MANESE: I'm speaking on behalf of the  
12 Committee action.

13 CHAIR BELL: Okay.

14 MR. MANCHE: CMP-1 and CMP-10 received  
15 similar proposals recommending field marking for the  
16 available fault short-circuit current marking for  
17 electrical equipment. These proposals were accepted  
18 in principle by both panels. The CMP-1 ballot vote  
19 was 83 to 1 and the CMP-10 vote was 88 to 4. The  
20 Technical Correlating Committee, as a result of those  
21 actions, formed a task group to determine if  
22 components could be submitted to correlate those two  
23 actions.

24 The task group was made up of CMP-1 members  
25 and CMP-10 members. The task group compared the two

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 120

1 panel actions and developed Comment 1-115, which is  
2 the subject of this certified amending motion. CMP-1  
3 heard testimony from the submitter of Proposal 1-83  
4 and spent considerable time discussing Comment 1-115,  
5 which recommended a marking requirements to be  
6 located in 110.24 rather than 240.35 based on the  
7 short-circuit current requirements that currently  
8 exist in 110.9, 110.10, and the requirements existing  
9 in 110.12.

10 Other modifications suggested by the task  
11 group and accepted by the CMP was the addition of the  
12 word maximum. The addition of the word "maximum" was  
13 to clarify that this marking would be used in  
14 conjunction with equipment rating and not hot flash  
15 hazard equipment. CMP-1 passed comment 1-115, 11 to  
16 1. And in a similar action, Code Panel 10 passed a  
17 similar comment that was later rejected by the TCC  
18 because of action that was taken by CMP-1, 1-115.  
19 And that comment was passed 11 to 1 also by CMP-10.

20 CHAIR BELL: Thank you for the discussion.  
21 Microphone 4.

22 MR. CARTEL: My name is Andy Cartel. I am  
23 asking to oppose the motion. I am an electrical  
24 subcode official for the borough of Princeton,  
25 New Jersey. We are served by a network system 12208,

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 121

1 three phase. We don't see transformers going in.  
2 They're going in, but we don't see them. So when a  
3 permit is requested, we ask the local utility to  
4 furnish us with a signed and dated letter giving us  
5 the short-circuit availability for that particular  
6 location. They do that.

7 We then request a plan that will satisfy the  
8 code regarding that. Having all that done, the  
9 inspection is made. And if we've got code  
10 compliance, that's great. And we put a sticker on  
11 there because the state of New Jersey requires it.  
12 And we date it. But we don't have a requirement at  
13 this time to put the fault current or that letter  
14 anywhere other than in our file in the building  
15 department. But if it's in compliance with, that's  
16 it.

17 Now, the fault current in Princeton is a  
18 moving target. A network system by its very nature  
19 is like that. We may go back two or three years  
20 later to that very same location. And because a  
21 permit's been filed and there is an alteration or an  
22 addition, something with a service, we get a new  
23 letter. And we don't do anything until we get the  
24 new letter. But without having a marking dated on  
25 that equipment, it really puts us in a real bind with

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 122

1 the owner of the building that this is not something  
2 that is easily explained to laymen and then in my  
3 experience to inspectors and contractors, much less  
4 to a building owner. And it involves possibly a  
5 large expense.

6 So the date that that inspection was made  
7 and the date of confirming the fault current  
8 requirements to me is very important. I oppose this  
9 motion. Thank you.

10 CHAIR BELL: Thank you. Microphone 6.

11 MR. JOHNSTON: Thank you, Mr. Chair. My  
12 name is Mike Johnston with the National Electrical  
13 Contractors Association. And I rise in opposition to  
14 the motion on the floor.

15 First I want to express support and  
16 agreement with the public record and the actions of  
17 both CMP-1 and CMP-10 as they worked on and came to a  
18 solution for this proposed requirement.

19 I would also like to commend and support the  
20 work of the assigned task group mentioned by CMP  
21 Chair Gil Manese. And the result of the proposed  
22 wording for the 2011 NEC.

23 The task group was made up of members of all  
24 concerned organizations that are represented on both  
25 Panels 10 and 1. So there was full representation

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 123

1 during the comment phases of the process to make sure  
2 that we ended up with something that was reasonable,  
3 practical, and enforceable language for the NEC. The  
4 motion on the floor does not bring any new  
5 information to this body that has not already been  
6 discussed and deliberated by the technical committees  
7 as they carried out their work this development  
8 cycle.

9           This requirement is enforceable. Having  
10 spent ten years in the enforcement business, I feel  
11 like it's in my wheelhouse to make that statement.  
12 The requirement calls for labels. That's all. It  
13 calls for labels that demonstrate compliance with  
14 this EC 110-9. The new label raises a new level  
15 regarding the rating of electrical equipment. That's  
16 all it does. The equipment is required to be rated  
17 for the amount of available fault current applied  
18 without exception. There are no exceptions to 110-9.

19           It is unacceptable for equipment to be  
20 applied and operated. I don't know its maximum  
21 ratings. I don't think anybody in this room would  
22 disagree with that statement. If it were acceptable,  
23 there would be an exception of 110-9 that relaxes  
24 this rating requirement for existing installations of  
25 equipment. But no such exception exists. And I

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 124

1 think if it were proposed, both Panel 10 and Panel 1  
2 would reject such an exception because it is not  
3 correct.

4           Some of the comments submitted in this  
5 proposal mentioned liability. I'm sorry. But the  
6 technical committees don't get to vote on that. That  
7 liability is there whether the label is on or not.

8           The requirement calls for a label that  
9 indicates the amount of maximum available fault  
10 current, which was the result of that task group that  
11 worked on this making it a more enforceable and a  
12 more readily achievable requirement in the NEC.  
13 Folks need to know the maximum valve fault current to  
14 be able to do engineering, to draw blueprints, to be  
15 able to construct a project, contractors need to know  
16 the information. Designers need to know the  
17 information. Owners need to know the information.

18           This does not seek to change any of that.  
19 All this does is seek to apply a label to the  
20 equipment that demonstrates compliance with 110.9 at  
21 a point in time you could change down the road so  
22 recognized.

23           The new language I believe will assist  
24 enforcement in maintaining compliance with 110-9 when  
25 difficult issues arise at a time downstream for

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 125

1 facility.

2           So, once again -- and I want to bring it to  
3 a close fairly shortly here -- the amount of the  
4 available fault current must be known and be a value  
5 for electrical installation. I encourage the body to  
6 support the public record and the work of CMP-1 and  
7 CMP-10 and accept the new requirement as proposed and  
8 accepted. Thank you, Mr. Chair.

9           CHAIR BELL: Thank you. Microphone 8.

10           MR. MCKLOWSKI: Vince McKlowski, National  
11 Electrical Manufacturers Association, speaking  
12 against the motion. Mr. Chairman, NEMA opposes the  
13 motion.

14           CHAIR BELL: Thank you. Any further  
15 discussion? Microphone 4.

16           MR. DOLLARD: Thank you, Mr. Chairman. My  
17 name is Jim Dollard with the International  
18 Brotherhood of Electrical Workers. And I rise in  
19 opposition to the motion.

20           I would just like to make a few brief  
21 statements. This is an equipment marking, its  
22 maximum fault marking and a date. It's all about  
23 equipment. And it does not deal with a number, a  
24 calculated number, that we will use in an art-flash  
25 analysis. This is a very important point that needs

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 126

1 to be brought out here and cleared up. Anyone that  
2 would use an equipment marking in an art-flash hazard  
3 analysis is a highly qualified person.

4 Today we have lots of unqualified people  
5 doing this type of work. Today we have people that  
6 go to overcurrent devices and look at the amp  
7 capacity or look at the interrupted rating and use  
8 those numbers. They shouldn't be doing anything with  
9 that equipment. And I urge this body to defeat this  
10 motion. Thank you, Mr. Chairman.

11 CHAIR BELL: Thank you. Microphone 2.

12 MR. LLOYD: Richard Lloyd speaking for  
13 myself. I'm a former code official. And we required  
14 those numbers from the contractor, which they usually  
15 got from the utility. I agree with Mr. Manche that  
16 they may not be accurate for long periods of time.  
17 However, I don't think it's --

18 CHAIR BELL: Are you speaking for or against  
19 the motion?

20 MR. LLOYD: Against.

21 CHAIR BELL: We don't get a break until we  
22 get ten perfect in a row.

23 MR. LLOYD: Richard Lloyd speaking for  
24 myself and a former code official. We required those  
25 numbers when I was a code official, which they

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 127

1 generally got from the utility. And while I agree  
2 with Mr. Manche that they may not be accurate  
3 forever, I don't think it's a day-to-day thing for  
4 the utility to go out and change transformers and so  
5 forth and create a much higher fault current than  
6 what they have at the time of the installation.

7           And so I think it will create a concern for  
8 anyone coming in to work on that equipment. When  
9 they see that number up there, it's going to be  
10 incumbent upon them to verify it or be liable if they  
11 mess up. So I think it's going to serve a purpose.  
12 And we should not accept this motion to take it back  
13 out of the Code.

14           CHAIR BELL: Thank you. Microphone 5.

15           MR. MANCHE: Alan Manche, Schneider Electric  
16 and Square D Company, supporting once again the  
17 motion.

18           I guess what I'd like folks to understand,  
19 we've heard everyone stand up against this and say  
20 there's a problem with the accuracy of the number.  
21 Everyone says it may or may not be accurate. If I  
22 walk up to that equipment and I'm going to use that  
23 number we just heard Mr. Lloyd say, I've got to  
24 verify it. We heard Mr. Johnston say, "Well, it may  
25 or may not be accurate. We've got to be able to

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 128

1     verify this."

2                   And I think Mr. Cartel does it the right way  
3     as an electrical inspection official. They ask for  
4     the inspection and verify it before they do work so  
5     they get the right equipment and work on it  
6     accurately. So he ensures if that marking were put  
7     on there the first time, Mr. Cartel explained it may  
8     not be the same number the next time.

9                   So you still have to go through the same  
10    process. The wrong information just ends up marked  
11    the first time after it's put on there. So you have  
12    to ask yourself what value is it and if there isn't  
13    value in it because it's not going to continue to be  
14    accurate. And you put people at risk because it  
15    could be misused. Thank you, sir.

16                   CHAIR BELL: Thank you. Microphone 6.

17                   MR. GOLDSMITH: Jeff Goldsmith, of GE Power,  
18    speaking against the motion.

19                   In the 2005 Code, there were requirements  
20    added in the new Article 409 for control panels and  
21    other inspections for switch gear panel boards and  
22    other equipment requiring a short-circuit current  
23    rating marking. That was not an easy or trivial  
24    thing to do. But it creates a number related to the  
25    design of a complex piece of equipment that says that

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 129

1 if you have this available fault current, you will  
2 not start a fire or cause an explosion or other great  
3 hazard as long as the available fault current does  
4 not exceed the short-circuit current rating marking  
5 on the panel.

6           It provides a magic number so that a  
7 relatively unsophisticated person can compare the  
8 available fault current to the rating and design of  
9 the equipment and determine whether it is  
10 fundamentally safe. I've been designing industrial  
11 equipment for many years. And it's always been a  
12 great difficulty to know what is the available fault  
13 current on a site to be able to design equipment  
14 accordingly.

15           Now, we've gone through the process of the  
16 added complication of having to design equipment  
17 specifically for the available fault current. And  
18 we've gotten there. So we now have that one critical  
19 number appearing on control panels, switch gear panel  
20 boards, and other equipment.

21           To make this work, we need the other  
22 critical number, the available fault current to be  
23 established, which is a much easier number to get.  
24 And I believe that we will have a much safer  
25 situation if anyone can look at the short-circuit

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 130

1 current rating on a piece of electrical equipment and  
2 look at the available fault current. And as long as  
3 the available fault current is greater than the  
4 short-circuit current rating, just about anyone can  
5 see that you have a safe situation. So I believe  
6 that it's a great addition to safety to add this  
7 marking. Thank you.

8 CHAIR BELL: Thank you. Microphone 4.

9 MR. COOK: Yes. My name is Donnie Cook, and  
10 I'm speaking for myself. I'm speaking in opposition  
11 to the motion. I'm a code enforcement official in  
12 Shelby County, Alabama. And like Andy, we obtain the  
13 available short-circuit value from the utility at the  
14 beginning of a job. We do a lot of multi-tenant jobs  
15 that last, in some cases, months or years. And we  
16 have numerous contracts working on that project.  
17 Each of those needs that value.

18 In many cases when the second or third  
19 tenant occupies the space, it is obviously that the  
20 transformer size has not changed. In my younger  
21 days, I might have remembered that value a month  
22 later. Today I don't remember what I ate for  
23 breakfast this morning. So it would be a tremendous  
24 value to the second, third, fourth or tenth installer  
25 in a multi-tenant occupancy to have that number

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 131

1 identified on the equipment so that everybody doesn't  
2 have to go back to the utility over and over and I  
3 don't have to go back to the utility over and over.

4 We can use that value throughout the project  
5 however long it lasts. If the transformer size  
6 changes, we'll realize that, and we'll get a new  
7 number from the utility. There's a great value in  
8 this marking requirement.

9 CHAIR BELL: Thank you. Microphone 9.

10 MR. WEBER: Mr. Chairman, thank you. Ray  
11 Weber from the great state of Wisconsin. I'd like to  
12 yield the mike to mike 6 at this point in time. And  
13 I'm proposing to call the question.

14 CHAIR BELL: I'm sorry. You can't do that.  
15 I'll go to microphone Number 7.

16 MR. WILKINSON: Yes. My name is Robert  
17 Wilkinson. And I'm from the IEC. And I'm for the  
18 motion.

19 In the Houston area, we had a hurricane not  
20 too long ago. And we knocked out thousands of  
21 transformers that came from all over the country and  
22 changed everything. And none of the fault currents  
23 were correct after that. And I think that's what we  
24 all were dealing with. And we should go ahead and  
25 support this motion. Thank you.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 132

1 CHAIR BELL: Thank you. Microphone 6.

2 MR. HICKMAN: Thank you. Palmer Hickman  
3 with the IBEW Panel 1 speaking against the motion.  
4 We did consider Mr. Manche's concerns at Panel 1 and  
5 rejected them. Please support the 11-to-1 vote of  
6 Panels 10 and 1. Thanks very much.

7 CHAIR BELL: Microphone 9.

8 MR. WEBER: Thank you, Mr. Chairman. Ray  
9 Weber from the great state of Wisconsin representing  
10 myself. I call for the question.

11 CHAIR BELL: The question is being called.  
12 Is there a second? All those in favor of calling to  
13 question, please raise your hand. All those opposed.  
14 Thank you. We'll move directly to the vote.

15 The vote is on the motion to return a  
16 portion of the report in the form of Proposal 1-183  
17 and related Comments 1-114 through 1-125. All those  
18 in favor of the motion, please raise your hand.  
19 Thank you. All those opposed. Motion fails.

20 Move on to Motion Sequence 70-3. Is there a  
21 motion on the floor related to Motion Sequence Number  
22 70-3? Microphone 1.

23 MR. KELEHER: I'm Paul Keleher representing  
24 Paul Keleher Electrical Services of Berlin,  
25 Massachusetts.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 133

1 CHAIR BELL: Thank you. And your motion?

2 MR. KELEHER: I move to accept an  
3 identifiable part of Proposal 2-193.

4 CHAIR BELL: The motion on the floor is to  
5 accept an identifiable part of Proposal 2-193. Is  
6 there a second? There's a second. Please proceed.

7 MR. KELEHER: The unidentifiable part will,  
8 if you accept it, create a new paragraph 5 under  
9 210.19A that will read as follows.

10 "Permissible Voltage Drop. The circuit  
11 conductors of a 15- or 20-ampere/120-volt branch  
12 circuit shall be sized such that voltage-drop  
13 measured at the rated ampacity of the circuit shall  
14 be 5 percent or less at any outlet."

15 I support this motion because doing so will  
16 bring two necessary safety improvements and two major  
17 side benefits to the electrical industry. First and  
18 most important, it will reduce branch circuit fires.  
19 And, second, it will increase certainly safety. But  
20 it will also generate significant energy savings and  
21 reduce costs at the same time.

22 Let me explain first why a mandated  
23 5 percent limit on voltage drop will reduce branch  
24 circuit fires. In a presentation to Code Panel 2 at  
25 the December 2009 ROC meeting, a major circuit

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 134

1 breaker manufacturer asked the following rhetorical  
2 question, quote, Can standard circuit breakers always  
3 protect against parallel arcing faults in home runs,  
4 unquote. The presenter answered his own question in  
5 one word. The word was "no." The circuit breaker  
6 manufacturer was referring to 120-volt outlets where  
7 excessive voltage drop prohibits operating to fault  
8 instantaneously as it is designed to do.

9           When this happens, the breaker responds to a  
10 short circuit or a ground fault with its thermal  
11 protection mechanism that has been designed and is  
12 tested for low levels of overcurrent but not to  
13 protect circuits from short-circuits or ground  
14 faults.

15           Proposal 2-193 has been substantiated by  
16 more than one thousand field short-circuit tests that  
17 confirm the problem the circuit breaker manufacturer  
18 referred to. That a standard circuit breaker cannot  
19 provide a sure protection from parallel faults when  
20 excessive voltage drop inhibits a breaker's magnetic  
21 trip. The substantiating data indicates several  
22 related problems that prove the need for a mandatory  
23 limit on voltage drop in branch circuits.

24           First, roughly 60 percent of 120 volt  
25 outlets exhibit a voltage drop of more than

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 135

1 5 percent, and an unknown number exceed 10 percent.

2           Second, in 75 percent of the tests where  
3 voltage drop does exceed 5 percent, the breaker  
4 responded thermally to a short-circuit test. This  
5 establishes a link between outlets with voltage drop  
6 exceeding 5 percent and thermal breaker responses.

7           And, third, based on maximum safe tolerances  
8 that are identified in appropriate industry  
9 standards, in 10 percent of these tests, over a  
10 hundred, the branch circuit was overheated. And in  
11 one test the branch circuit was heated to the point  
12 where its receptacle screw terminals were loosened  
13 according to the standard. The manufacturers  
14 solution to these problems is the AFCI.

15           An AFCI responds to arching conditions. The  
16 problems of concern here are caused by an extensive  
17 heating, not ours. Therefore, an AFCI does not solve  
18 this problem. A short-circuit or ground fault can  
19 generate damaging heat at all outlets of a branch  
20 circuit from the branch breaker to the point of the  
21 fault in only a few seconds.

22           The hidden damage that can result when a  
23 thermal breaker responds to a short-circuit or a  
24 ground fault is not fast enough and typically goes  
25 undetected until some future time when a sizable load

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 136

1 is applied to that circuit and the damaged circuit is  
2 stressed. A fire may result perhaps years after it's  
3 causal event occurred.

4 By limiting voltage drop to 5 percent or  
5 less to any 120 volt outlet, we will ensure a  
6 magnetic breaker response to short-circuits and  
7 ground faults and limit exposure of a circuit and, in  
8 the case of a ground fault, exposure of personnel to  
9 one cycle or less.

10 The test data indicates that a hundred  
11 percent of the time when a breaker did respond  
12 magnetically, circuit heating was limited to very  
13 safe levels. I mentioned energy savings due to  
14 reduced line losses. The data indicates that the  
15 majority of 120-volt outlets exhibit more than  
16 5 percent voltage drop.

17 At an unknown number of outlets, voltage  
18 drop exceeded 10 percent. Limiting voltage drop to  
19 5 percent or less will reduce the amount of energy  
20 that is wasted in branch circuits by a proportional  
21 amount, which could be as much as 50 percent. This  
22 will save energy big time. And in these times, as  
23 expansion of electricity for transportation is coming  
24 fast, we can't waste this kind of energy. Please  
25 support this proposal.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 137

1 CHAIR BELL: Thank you. Mr. Carpenter?

2 MR. CARPENTER: Yes, thank you. I'd like to  
3 defer to the Chair of the panel, Ray Weber.

4 MR. WEBER: Thank you, Mr. Chair. Ray  
5 Weber, proudly representing Panel 2 and the IAEI  
6 representative on the panel.

7 Mr. Keleher I know is very passionate on his  
8 view point. This has been debated for two and  
9 possible three cycles of the Panel 2 actions. And  
10 they have maintained that the Panel reaffirms their  
11 position taken on the similar proposals by different  
12 code cycles that a voltage drop is a designed  
13 consideration that must be dealt with by the  
14 installer designer for each installation and can be  
15 specific to the involved equipment.

16 Now, once again Mr. Keleher does mention the  
17 AFCI's. I feel that is something that, in fact, can  
18 help mitigate the situation that he's trying to  
19 address. And I realize that probably only addresses  
20 new type of construction versus, say, the old housing  
21 stock we have. But with new proposals, that may be  
22 in line as well. So the panel's firm position is to  
23 reject this.

24 CHAIR BELL: Thank you. Further discussion?  
25 Microphone 5.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 138

1           MR. MR. LINDSAY: Thank you. Travis  
2 Lindsay, Travis Lindsay Consulting Services, Inc.  
3 I'm speaking in favor of the motion. I believe that  
4 we all know that when a circuit has too much voltage  
5 drop, it can fail. The equipment connected to it can  
6 fail. My interest here is one of safety. That is,  
7 if a piece of equipment fails, it may have that  
8 secondary effect or even a tertiary effect on the  
9 life safety of the people in the building.

10           Now, we talked about this a number of times.  
11 And it may be a design consideration. But aren't all  
12 things design considerations? We're talking about  
13 equipment that may be emergency or standby equipment.  
14 That's not regulated by the Code as it stands now.  
15 It is imperative that we protect people.

16           We also understand that although voltage  
17 drop is a design consideration, in a second or  
18 tertiary event it can cause system failures and  
19 manufacturing processes and other things.

20           Now, we can just blindly allow those things  
21 to continue. But it's in our better interest to take  
22 a good hard look at this. Thank you very much.

23           CHAIR BELL: Thank you. Microphone 8.

24           MR. MCKLOWSKI: Vince McKlowski, National  
25 Electrical Manufacturers Association, speaking

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 139

1     against the motion. Mr. Chairman, NEMA opposes the  
2     motion. Thank you.

3             CHAIR BELL: Thank you. Microphone 5.

4             MR. LLOYD: Richard Lloyd speaking for  
5     myself. I'm for the motion. For years we always say  
6     the voltage drop is a fine-print note. It will be an  
7     informational note in the next code, and it is a  
8     design feature. However, I think installations are  
9     being improperly designed. My own new home was wired  
10    with a Number 14 wire in the bedrooms and so forth.  
11    My master bedroom is a good distance away from the  
12    panel. If we plug a vacuum cleaner in our master  
13    bedroom, we get a significant voltage drop. To me  
14    that's a code violation of 110.3(b) because the  
15    equipment calls for 120 volts. We're getting about  
16    95 in that back bedroom when you put a load on it.  
17    I'm not tripping any breakers. I don't have enough  
18    current to trip a breaker. My AFCI's which I have in  
19    my new home are not trippy.

20            So even though it is a design consideration,  
21    I don't think anybody is taking it into design  
22    consideration. The fine-print note and the way it's  
23    being taught out there by all the teachers is not  
24    getting the job done. And I don't think that it  
25    would hurt to put it in as a mandatory requirement

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 140

1 under branch circuits. It will solve a lot of  
2 problems. And, as the proponent said, it will save  
3 energy.

4 CHAIR BELL: Thank you. Microphone 6.

5 MR. JANIKOWSKI: Mr. Chairman, Ron  
6 Janikowski from the inspection arena. I speak in  
7 opposition only because I think it will be very  
8 difficult to enforce. Thank you.

9 CHAIR BELL: Thank you. Microphone 9.

10 MR. JOHNSTON: Thank you, Mr. Chair. Mike  
11 Johnston with NECA. I speak in favor of the motion.  
12 I'm also a member of NEC Code-making Panel 5. And I  
13 know there's a relationship between the effective  
14 ground fault current path and branch circuits and  
15 feeders that often involve voltage drop issues.

16 I would also like to remind the body there  
17 are other requirements in the NEC such as those that  
18 deal with fire prompts that mandate maximum voltage  
19 drop limitations to address those concerns.

20 So while I'm mindful that there has been a  
21 position expressed about those being design  
22 considerations, and I'm in agreement with that, I  
23 have recognized that there may be some value in what  
24 is being proposed and what was acted on the record by  
25 CMP-2 this cycle relative to a mandatory voltage drop

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 141

1 requirement in the NEC. Thank you, Mr. Chair.

2 CHAIR BELL: Thank you. Microphone 8.

3 MR. MANCHE: Alan Manche, Square D and  
4 Schneider Electric, speaking in opposition to the  
5 motion.

6 I'd simply like to say that if the group  
7 wants to put a voltage drop requirement in, that's  
8 fine. But the rationale and where it's going in here  
9 completely seems to be off base. A performance  
10 requirement for energy efficiency belongs over in the  
11 energy efficiency codes, not the National Electric  
12 Codes.

13 So it would appear to me that this  
14 discussion with regard to where it needs to go and  
15 where it needs to be placed in order to support the  
16 performance aspects of energy is completely down the  
17 wrong aisle here. And we're supporting this  
18 completely because it's the wrong rationale.

19 CHAIR BELL: Thank you. Microphone 7.

20 MR. KELEHER: Paul Keleher, Paul Keleher  
21 Electrical Services. I'm the maker of the motion.  
22 I'd like to speak to the enforcement issue that was  
23 raised.

24 This proposal can be enforced by an  
25 authority having jurisdiction with a plug-in voltage

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 142

1 drop test where the inspector needs to go to an  
2 outlet that appears to be the furthest from the  
3 distribution panel serving that outlet, plug in a  
4 voltage drop tester and take a reading. That's all  
5 that needs to be done for enforcement.

6           As regards to the previous speaker,  
7 Mr. Manche, his argument that this is a proposal  
8 about energy safety and belongs in some other codes,  
9 he perhaps didn't understand my emphasis. The most  
10 important value here that I have spoken about is the  
11 safety issue. That when voltage drop exceeds  
12 5 percent, circuit breakers are inhibited from  
13 responding as they're designed to do. And that is a  
14 safety issue.

15           And to this I speak to Mr. Weber as chair of  
16 the panel to which I'm proposing. The panel  
17 continues to refuse to look at the data that has been  
18 submitted with this proposal that substantiates the  
19 overheating that goes on when a magnetic trip  
20 response is inhibited by high voltage drop. This  
21 proposal is accompanied by a significant amount of  
22 test data, and the panel has not yet considered that  
23 data.

24           CHAIR BELL: Thank you. Microphone 4.

25           MR. WILKINSON: Robert Wilkinson, IEC. I

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 143

1 call the question.

2 CHAIR BELL: The question has been called.

3 I heard a second. We'll move directly to a vote.

4 All those in favor of calling to question, please

5 raise your hand. Thank you. All those opposed. The

6 motion passes.

7 We'll move directly to the vote on the

8 motion on the floor, which is to accept an

9 identifiable part of Proposal 2-193. All those in

10 favor of the motion, please raise your hand. Thank

11 you. All those opposed. We'll go to a standing

12 count on this one.

13 Thank you. You can be seated. All those

14 opposed to the motion, please stand. Motion fails 94

15 to 125.

16 Moving on to the next motion sequence, which

17 is 70-4. Is there a motion on the floor related to

18 Sequence Number 70-4? We're looking for a motion on

19 Sequence Number 70-4. Microphone Number 9.

20 MS. TOMASINO: Good morning, ladies and

21 gentlemen. My name is Alicia Tomasino. And I'm the

22 designated representative for Carlo Compagnone, Compa

23 Covers, Inc., out of Boston, Massachusetts. I move

24 today to accept Comment 3-13.

25 CHAIR BELL: The motion on the floor is to

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 144

1 accept Comment 3-13. Is there a second? I hear a  
2 second. Please proceed.

3 MS. TOMASINO: Thank you. The provisions  
4 contained in the Code in relation to the within  
5 proposal are far from adequate to safeguard persons  
6 and property.

7 As a result, the property is burning.  
8 People are being injured. And people are dying. If  
9 the Code provided adequate protection for persons and  
10 properties in 2006, there would not have been 16,380  
11 reported nonconfirmed home structure fires involving  
12 premises wiring group.

13 If the Code had provided adequate  
14 protection, would 145 civilians have died in 2006?  
15 458 civilians have been injured, and \$497 million in  
16 property damage occurred as a result of these fires.

17 "Premises wiring group" is defined by the  
18 NEC as the wiring between power source and outlet and  
19 does not include cords, plugs and light fixtures.  
20 This data is provided by the NFPA in the 2009 article  
21 "Home Electrical Fires," written by John R. Hall.

22 Mr. Hall notes in his article that, quote,  
23 the number of fires decline for wiring as one moves  
24 from inside the house, along the wiring network,  
25 towards the connections outside the house, end quote.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 145

1 According to this analysis, the majority of fires  
2 begins within the outlet box, which is the one area  
3 of premises wiring in which the NEC provides no  
4 specific guidelines.

5           These statistics indicate that the NEC must  
6 recognize that it is necessary to include a provision  
7 requiring that electrical boxes be covered after  
8 their installation because the current provisions of  
9 the Code are not adequate to prevent foreign  
10 materials from entering electrical boxes, damaging  
11 the wiring inside, and causing fires.

12           This proposal has not been accepted because  
13 it has been argued that the provisions contained in  
14 110.12 are adequate to address this problem. In  
15 listening to these statistics, it is clear that the  
16 code provisions are far from adequate.

17           Section 110.12 dealt with the situation  
18 adequately with 61 percent of home structure fires  
19 being caused by premises wiring group. Section  
20 110.12 states that there shall be no damaged parts  
21 that may adversely effect the safe operation or  
22 mechanical strength of the equipment. Clearly,  
23 electricians have not wired parts that are damaged.  
24 However, wires in the electrical box are highly  
25 vulnerable to damage, particularly during the

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 146

1 construction phase. With so much demand on the  
2 construction industry, subcontractors do what is best  
3 and fastest for them. Whether it's the plumber, the  
4 board hanger, the plasterer, the painter, or spray  
5 foam insulator, their only concern is getting their  
6 job done. Other contractors have no concern for the  
7 damage they cause, especially where it's unseen, such  
8 as in the device box.

9           The NEC must take action and mandate the use  
10 of a copper plates over device boxes in order to take  
11 control over these safety issues which are  
12 never-ending.

13           It is unclear why the NEC contains  
14 provisions for protection against physical damage  
15 vulnerability throughout the construction process but  
16 does not contain a single provision adequately  
17 addresses the wire for weeks and months on job sites  
18 subject to damage.

19           Interestingly, by failing to require that a  
20 cover be placed over the device boxes, other articles  
21 in the NEC are violated. For instance, Article  
22 110.12 provides that the equipment must be installed  
23 in a neat and workmanlike manner. However, wire left  
24 exposed having been contaminated by paint, plaster,  
25 or other materials must be cleaned out or cut. And

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 147

1 the requirements of Section 110.12 are not met since  
2 the work is no longer neat and workmanlike.

3 In another instance, Article 250.485  
4 establishes provisions for effective ground fault.  
5 When the ground fault gets covered in foreign  
6 substances, it is not as strong as it should be and  
7 is ultimately a safety issue.

8 Further, Section 300.14 requires 6 inches be  
9 left in an electrical box. When wiring is  
10 compromised during the construction process, it's  
11 impossible for an electrician to comply with this  
12 provision.

13 Financially, the implications of  
14 implementing this proposal are minimal. In fact, the  
15 failure to implement this provision has actually  
16 resulted in increased cost. The circuit breakers  
17 used to cost \$4. Now, circuit-breakers have been  
18 required by Panel 2. These costs are ten times more  
19 than breakers of the past because they must be more  
20 sensitive to arcing.

21 Simply put, because this panel has not been  
22 proactive enough, other panels are left cleaning  
23 after you.

24 CHAIR BELL: Thank you. Mr. Carpenter?

25 MR. CARPENTER: Yes. I'd like to make the

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 148

1 group aware that this subject was more appropriately  
2 covered in Section 3-14 and was transferred to  
3 Code-making Panel 9. And we will get the same type  
4 of motion when we get to 70-12.

5 As far as Panel 3 is concerned, I'd like to  
6 defer to Paul Casparo, Chairman of Panel 3, at  
7 microphone 4.

8 MR. CASPARO: Thank you, Mr. Chairman. Paul  
9 Casparo representing the IBEW and Chairman of  
10 Panel 3. This has a long history, which we'll go  
11 into.

12 It was the action of the Technical  
13 Correlating Committee that this proposal be referred  
14 to Code-making Panel 9. This proposal appeared in  
15 Comment 3-8 on Proposal 3-32 in the 2007 Annual  
16 Meeting NEC Committee Report on Proposals. This  
17 comment was held for further study during a process  
18 of the 2008 NEC.

19 The recommendation was that the conductors  
20 inside electrical boxes subject to physical damage,  
21 such as router beds, sheet rock, saws, and knives,  
22 were not conductive to coating such as drywall,  
23 lacquer, or enamel. It must be temporarily protected  
24 by means of a rigid metal cover plate not less than  
25 47/100 of an inch required thickness to prevent it

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 149

1 from penetrating the metal plate. There was an  
2 exception that listed covers that had one strand and  
3 characteristics shall be permitted. The proposal was  
4 rejected 14 to 0. NEC Technical Correlating  
5 Committee established a task group between the 2008  
6 NEC and the 2011 NEC code cycles studying this issue.

7           Whether Code-making Panel 1, Code-making  
8 Panel 3 or Code-making Panel 9 has jurisdiction over  
9 the requirements for protective plates for boxes,  
10 some of the discussion during the task group meeting  
11 was related to plate thickness, enforcement,  
12 installation procedures, and similar technical  
13 issues.

14           The task group determined that Code-making  
15 Panel 9 would have jurisdiction over this issue since  
16 Code-making Panel 9 specifically deals with  
17 conductors in the box as well as cover sizes. Adding  
18 suggested text would not be appropriate until  
19 Code-making Panel 9 deals with the issues.

20           CHAIR BELL: Thank you. Further discussion?  
21 Microphone 5.

22           MR. LLOYD: I'm for the motion. Richard  
23 Lloyd speaking for myself. I think the TCC Chairman,  
24 as Mr. Carpenter put it aptly, we've been playing  
25 musical chairs. I have had a proposal in the last

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 150

1 couple of cycles. And you never show for sure where  
2 to put it in because it's bounced between the three  
3 panels.

4           But this was brought to my attention a few  
5 years ago. I looked at the situation and talked to  
6 some manufacturers. It's a real problem. These  
7 boxes are getting filled up with stuff. We used to  
8 have a couple of wires folded up in there. We can  
9 pull them out and scrape the mud off the box. It was  
10 no problem.

11           But with technology as it is today and the  
12 nonmetallic boxes that a lot of people are using in  
13 these dwellings, it's very easy to build a cover that  
14 will flap over these things. And the painters and  
15 the drawl people are done. And it can be broke off  
16 or cut off or whatever. And the house trimmed out.

17           We used to only have wires. Today we have  
18 dimmers. We have all sorts of things that go in  
19 these boxes. And if you cover them with paint or mud  
20 or plaster, they heat up. They depend on air to  
21 dissipate heat. They can't do that with this. It is  
22 an issue.

23           I don't think it's been properly heard  
24 because of the fact that it's bounced between the  
25 three panels. Nobody has heard the history of the

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 151

1 problem. And it's a real issue. I think we should  
2 put it in the Code. We worry about panel boards and  
3 breakers. We've required for some time that foreign  
4 materials be kept out of them. When we do put  
5 cardboard over that panel, until after everything's  
6 done, jerk that cardboard off and put the trim on,  
7 and everything's nice and clean.

8 We're not giving the same concern to the  
9 dimmers and all the various little electronic  
10 controls that are in those boxes. They're getting  
11 painted, and they're failing and heating up in the  
12 home. Whether they start fires or not, I think they  
13 are certainly a danger.

14 CHAIR BELL: Thank you. Microphone 8.

15 MR. MCKLOWSKI: Vince McKlowski, National  
16 Electrical Manufacturers Association, speaking in  
17 opposition to the motion. Mr. Chairman, NEMA opposes  
18 the motion. Thank you.

19 CHAIR BELL: Thank you. Microphone 4?  
20 Microphone 9? Any further discussion? Microphone 3.

21 MR. LAUGHLIN: Keith Laughlin with the  
22 National Association of Electrical Inspectors,  
23 speaking on behalf of myself, opposing the motion.

24 I do serve on Panel 9 and will be  
25 representing Panel 9 when we get to this then. But

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 152

1 we did look at this. And, first off, the submitter  
2 of the proposal has a fabulous product. I wish I  
3 would have thought of it. To accept the proposal,  
4 though, would limit users to only this product or  
5 something very similar. And Mr. Lloyd even brought  
6 out what we're doing with panel boards and with  
7 cardboard and things like that. Accepting this, I  
8 wouldn't be able to use cardboard to protect the  
9 conductors in a box. So I'm speaking in opposition.

10 MS. TOMASINO: Alicia Tomasino speaking in  
11 support of this motion. He raises a good point.  
12 Mr. Carpenter did invent a product to cover the  
13 electrical boxes. But he's a master electrician.  
14 He's been so for about 20 years. And he invented  
15 this product because he saw a problem.

16 As we were researching in regards to  
17 following up and making these arguments before you  
18 today, I came across these statistics that are  
19 showing that fires are being caused. And they're  
20 coming from these electrical boxes. And the damage  
21 is occurring in these electrical boxes.

22 However the NEC addresses the problem,  
23 something has to be put in place that requires  
24 protection over the boxes, whether it's a plastic  
25 cover, a metal cover, or just a provision that says

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 153

1 it needs to be covered. The NEC must address this  
2 issue.

3 CHAIR BELL: Thank you. Microphone 4.

4 MR. WILKINSON: Robert Wilkinson, IEC, call  
5 the question.

6 CHAIR BELL: There's been a motion to call  
7 the question. Is there a second? There's a second.  
8 All those in favor to call the question, please raise  
9 your hand. Thank you. All those opposed. Motion  
10 passes.

11 We'll move directly to the vote to accept  
12 Comment 3-13. All those in favor of accepting  
13 Comment 3-13, please raise your hand. Thank you.  
14 All those opposed. Motion fails.

15 We'll move on to the next sequence, Motion  
16 Sequence 70-5. Is there a motion on the floor?  
17 Microphone 5.

18 MR. BRENT: Yes. Martin Brent, employed by  
19 Wheatland 2 Company, a fittings manufacturer,  
20 speaking for myself. I'm the maker of the motion and  
21 speaking in support of the motion. I move for the  
22 acceptance.

23 CHAIR BELL: Let's get the motion on the  
24 floor. Your motion is to reject Comment 3-22; is  
25 that correct?

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 154

1           MR. BRENT: Yes, sir.

2           CHAIR BELL: Is there a second? Please  
3 proceed.

4           MR. BRENT: I move for the acceptance of my  
5 NITMAM 70-5, which seeks rejection of Comment 3-22.  
6 If successful, this proposed motion will return  
7 300.6A back to the previous edition text since the  
8 original Proposal 3-64 was rejected.

9           The substantiation states, As an electrician  
10 purchases factory-made elbows or factory-cut nipple,  
11 the threads of these items do not always have  
12 corrosion protection on the thread like the full  
13 lengths of made conduit do."

14           It also states, "These threads have the same  
15 corrosion issue as field cut threads and need  
16 field-applied protection. While I agree they are  
17 similar, there are some differences.

18           And the fact that the manufacturer under a  
19 manufacturing listing is required to have corrosion  
20 protection on the threads, it's a very big difference  
21 than the field cut threads which are outside the  
22 control of UL.

23           And the language in the 2008 Code is  
24 appropriate for that. Factory threaded elbows and  
25 nipples are required by the listings to have a

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 155

1 corrosion resistance code. Please support my NITMAM  
2 and vote to approve -- reject 3-22.

3 CHAIR BELL: Mr. Carter.

4 MR. CARTER: I'd like to defer to the Chair  
5 of Panel 3, Paul Casparo.

6 MR. CASPARO: Paul Casparo representing  
7 IBEW. Panel 3 accepted in principle that comment.  
8 Some of the discussions were factory 90's,  
9 manufacturer 90's, and the protection that they  
10 already had. The field cut threads was another  
11 issue. And it was termed that field cut threads did  
12 need additional protection, which it does have now.  
13 So, again, Panel 3 accepted in principle 3-22.

14 CHAIR BELL: Further discussion?  
15 Microphone 3.

16 MR. KAVOJIC: Thank you Mr. Chairman. John  
17 Kavojic, Underwriters Laboratories, speaking as the  
18 representative of the Electrical Section of the  
19 National Fire Protection Association and speaking in  
20 favor of the motion.

21 The Electrical Section of NFPA met earlier  
22 this week. And at that meeting, the members voted to  
23 support the motion on the floor. Thank you.

24 CHAIR BELL: Thank you. Microphone 1.

25 MR. ODEE: Mark Odee, Underwriters

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 156

1 Laboratories and alternate member of Panel 3. And  
2 I'm supporting the motion. UL 6, covering rigid  
3 metal conduit, and UL 1242, covering IMC and rigid  
4 metal conduit, requires standard lengths of rigid  
5 metal conduit. The IMC couplings, elbows, nipples  
6 that have a galvanized coating applied at the factory  
7 has corrosion protection. So the proposed extra  
8 field-installed protection is unnecessary.

9           This proposed change would introduce  
10 circumstances where substantial lengths of listed  
11 raceways and fittings already installed to be removed  
12 for the extra corrosion protection to be installed  
13 with no technical reason. These things are already  
14 coming as part of the listed assembly.

15           In other words, I take a piece of rigid  
16 metal conduit, put a coupling together, I put  
17 fittings together, they're already corrosion  
18 protected by the factory. And we test for that  
19 corrosion protection. So this is an unnecessary  
20 inclusion in the National Electrical Code.

21           CHAIR BELL: Thank you. Microphone 9.

22           MS. THOMPSON: Thank you, Mr. Chairman.  
23 Elaine Thompson, Allied Tube and Conduit, speaking  
24 for the motion.

25           When this was put forward, the change in

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 157

1 this language, the 300.6 in the proposal stage,  
2 Panel 3 voted unanimously to reject it. And the  
3 reason for the rejection was, as former speakers have  
4 already testified, there is already erosion  
5 protection on factory supplied product. And, number  
6 two, there's already something in the code that takes  
7 care of field cut threads. And, number 3, there was  
8 not sufficient substantiation or problem.

9           So I don't know what happened during the  
10 comment stage to change the panel's mind. And  
11 perhaps they didn't realize the full impact of the  
12 language. But the language now states that where  
13 corrosion protection is necessary and where threads  
14 do not have corrosion protection, the threads shall  
15 be coated, et cetera.

16           What's going to happen, you know, we  
17 manufacturers coat the thread. So that's not a  
18 problem. I think it's going to be really tough on  
19 inspectors, installers, and contractors because every  
20 time they install threaded conduit now, I think  
21 they're going to have to be calling the factory. "Do  
22 you have corrosion protection on your threads?" And  
23 the answer is quite simply, "Yes, we do." We have  
24 to. We're required to do so by the UL standards.

25           So I think it's going to cause a lot more

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 158

1 problems than it's trying to solve. And we hope you  
2 support this motion.

3 CHAIR BELL: Thank you. Microphone 5.

4 MR. MCKLOWSKI: Vince McKlowski, National  
5 Electrical Manufacturers Association speaking in  
6 support of the motion. Mr. Chairman, NEMA does  
7 support the motion. Thank you.

8 CHAIR BELL: Thank you. Microphone 9 again.

9 MR. JOHNSTON: Thank you, Mr. Chair. Mike  
10 Johnston, NECA. I'm talking in support of the  
11 motion.

12 I believe this may introduce unnecessary  
13 steps in what the contractors and installers are  
14 required to accomplish or perform when it's already a  
15 provision of the fittings and so forth for conduit.  
16 So NECA supports the motion on the floor.

17 CHAIR BELL: Thank you. Microphone 2.

18 MR. HIRSCHLER: Marcelo Hirschler, GBH  
19 International, call the question.

20 CHAIR BELL: Motion to call the question.  
21 Is there a second?

22 UNIDENTIFIED SPEAKER: Second.

23 CHAIR BELL: There is a second. All those  
24 in favor of calling to question, raise your hand.  
25 All those opposed. Motion carries. We'll move

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 159

1 directly to the vote to reject Comment 3-22.

2 All those in favor please, raise your hand.

3 Thank you. All those opposed. Motion carries.

4 At this time, ladies and gentlemen, I did  
5 want to mention that we're up to 13. You broke the  
6 record. So I want to congratulate you. And we can  
7 continue after a break. We're going to take a  
8 15-minute break at this time.

9 Please recognize that we will not take a  
10 formal lunch break in order to most effectively use  
11 your time. Thank you.

12 (A brief recess was taken.)

13 CHAIR BELL: Ladies and gentlemen, get  
14 seated, and we'll get started again. I do want to  
15 remind you that you have your 13 consecutive streak,  
16 and we're still counting.

17 So we're up to motion sequence 70-6. Is  
18 there a motion for Sequence Number 70-6?  
19 Microphone 1.

20 MR. FLEGEL: Mike Flegel, Reliance Controls  
21 Corporation. I move to accept Comment 3-69.

22 CHAIR BELL: The motion is to accept Motion  
23 3-69. Is there a second? I hear a second. Please  
24 proceed.

25 MR. FLEGEL: This motion is to return the

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 160

1 language in Article 590.6 NEC. The issue is not  
2 whether GFCI protection is needed for portable  
3 generator power and temporary installations. It is  
4 needed, and it is already required in the 2008 NEC.  
5 But rather the issue is where to place that GFCI  
6 protection so that it provides the highest level of  
7 protection against injury by ground faults for the  
8 workers.

9           The panel action now requires the GFCI  
10 protection to be built into the generator receptacles  
11 for generators manufactured after January 31st, 2011.  
12 A study by the Construction Safety Association of  
13 Ontario, done in conjunction with the International  
14 Brotherhood of Electrical Workers, concluded that  
15 GFCI protection used in floating systems should be  
16 placed as close to the worker as possible. Since the  
17 NEC does not require portable generators in  
18 stand-alone use to be grounded, they are floating  
19 systems.

20           Requiring the GFCI protection to be built  
21 into the generator goes against the conclusions of  
22 this study and decreases workers safety. Ironically,  
23 or maybe not so ironically, the 2008 NEC language is  
24 actually fairly close to the conclusions of the study  
25 done by the Construction Safety Association of

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 161

1 Ontario and the IBEW.

2 It needs to be retained in the 2011 NEC.

3 There is absolutely no indication that the 2008 code  
4 language is not providing a safe environment. There  
5 is no hurry to make a change given the process.

6 Another code cycle will review these issues. It will  
7 not hurt worker safety. That seems to be a better  
8 alternative than decreasing worker safety. Please  
9 vote in favor of my motion. Mr. Carpenter.

10 MR. CARPENTER: I would defer to the panel  
11 chair of Panel 3, Paul Casparo.

12 MR. CASPARO: Thank you, Mr. Chair. Paul  
13 Casparo representing the IBEW. I'm going to defer to  
14 Mark Odee, Panel 3.

15 MR. ODEE: Thank you, Paul. Mark Odee,  
16 Underwriters Laboratories, alternate member of  
17 Panel 3. And I'm speaking against the motion.

18 I'll take a very brief amount of time and  
19 kind of give you a historical brief on how this came  
20 about and when it first came about and what the  
21 requirements were in the National Electrical Code  
22 starting in 1975.

23 75 NEC Section 210.8(b) required all  
24 120-volt single-phase receptacle outlets not part of  
25 the permanent wiring of the building or structure to

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 162

1 have ground fault circuit interrupters for personal  
2 protection.

3 An exception was inserted into 210.8(b) that  
4 permitted receptacle on a portable generator rated  
5 not more than 5 KW where the circuit conductors of  
6 the generator are insulated from earth and the  
7 generator frame is insulated from earth and all  
8 grounded surfaces.

9 This section and the exception was moved to  
10 Section 305.4A in 1984. And the text in the  
11 exception was changed to again deal with two wires,  
12 single-phase portable or vehicle-mounted generators  
13 rated not more than 5 KW, again, requiring GFCI  
14 protection for generators that were larger than 5 KW.  
15 But the exception four 5 KW in smaller generators  
16 still stayed in the code.

17 The exception, by the way, existed until the  
18 2002 NEC, when it was removed by Panel 3. And the  
19 intent of removing the exception was to require GFCI  
20 protection for those receptacles even on generators  
21 that were smaller than 5 KW. So it's been in the  
22 Code a long time. We've been dealing with this for a  
23 long time.

24 Now, when I go back and I look at my  
25 requirements in Article 250 dealing with portable

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 163

1 generators and vehicle-mounted generators, 250.34  
2 requires that -- it permits a generator that's a  
3 portable generator to not have a driven ground rod.  
4 In other words, I don't have to have a grounding  
5 electrode for a portable generator, which would be  
6 almost unreasonable. Every time you put a portable  
7 generator down, you'd have to drive a ground rod.

8           So, in effect, when I go back to 250.34A, it  
9 does not require a grounding electrode for a portable  
10 generator. But when I look at 250.34C, 250.34C says  
11 if I have a requirement for a grounded conductor,  
12 then that grounded conductor must be attached to the  
13 frame of the generator, which means that the  
14 equipment grounding conductor going out from that  
15 generator is going to be the path for the current  
16 flow to get back to the generator frame and from the  
17 generator frame back in through that bonding jumper  
18 to the actual core of the generator.

19           And that was the concept that we looked at.  
20 When I get into 15 KW and larger generators, the  
21 larger the 15 KW, I can end up with a capacitor  
22 effect on these kinds of generator where it can be  
23 critical in having the proper kind of protection on  
24 those generators.

25           If you look at UL 2201, UL 2201, which

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 164

1 handles 15 KW and smaller generators, now requires a  
2 15, 20 and 30 ampere 120-volt receptacles on these  
3 generators be GFCI protected. Well, Panel 3 went one  
4 step further, similar to what we have since 1975.  
5 And it included GFCI requirements for 15 and 20 and  
6 30 ampere receptacles to be GFCI protected even in  
7 the 120/240 volt range.

8           So, in effect, that's what we did. And we  
9 very clearly put a date on these generators so that  
10 we would know exactly when a new generator was  
11 installed or provided. So, again, we didn't require  
12 this for existing generators. Thank you, Mr. Chair.

13           CHAIR BELL: Thank you. Further discussion?  
14 Microphone 1.

15           MR. BLACK: Neal Black, Reliance Controls  
16 and also the representative for Code-making Panel 13  
17 from the National Electrical Manufacturers  
18 Association. Mr. Chairman, when Underwriters  
19 Laboratories --

20           CHAIR BELL: Speaking? You broke the  
21 streak.

22           MR. BLACK: Sorry. Speaking for.  
23 Mr. Chairman, when Underwriters Laboratories  
24 submitted this particular proposal to require GFCI  
25 outlets inside portable generators 15 KW and below to

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 165

1 Code-making Panel 3 and to Code-making Panel 13, I  
2 believed then, as I do now, that they did so with the  
3 best intentions of public safety. Unfortunately,  
4 they chose a one-system-fits-all approach. And  
5 equally as unfortunate, the truth is this is a  
6 system-related issue. No one's questioning that  
7 GFCI's are necessary. The question is, where are  
8 they necessary? And that is a system issue.

9           It depends on whether the generator is a  
10 bonded neutral generator or a floating neutral  
11 generator. It depends on whether it's connected to  
12 premises or wiring. It's a system issue. And,  
13 therefore, I believe this is a flawed proposal.

14           But no one need take my word for it.  
15 Underwriters Laboratories assembled a standards  
16 technical panel, a group of technical experts from  
17 across the country. Experts in generators. Experts  
18 in generator safety. Experts in transfer switches.  
19 Experts in generator applications, such as  
20 electricians and local inspectors. That group was  
21 formed to put together the UL 2201 standard. And  
22 that group refused to support requiring GFCI's on  
23 generators for safety reasons.

24           There's more. As has been reported by the  
25 National Electrical Association and others, generator

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 166

1 manufacturers who could make money off of this  
2 proposal are not in favor of it. GFCI manufacturers  
3 who could make money off this proposal are not in  
4 favor of it. And transfer switch manufacturers and  
5 transfer equipment manufacturers who could make money  
6 off this proposals are not in favor of it.

7           But there's more. As you mentioned earlier,  
8 Code-making Panel 1 discussed it at length, and  
9 Code-making Panel 13 also refused to support this  
10 proposal. So I ask the members, if UL's own  
11 Standards Technical Member Panel thinks this is a bad  
12 idea and if the generator manufacturers think this is  
13 a bad idea and the GFCI manufacturers think this is a  
14 bad idea and the transfer equipment manufacturers  
15 think this is a bad idea and the Code-making Panel 13  
16 thinks this is a bad idea, then perhaps it warrants  
17 some additional consideration. And I would recommend  
18 that the motion be adopted and that the proposal be  
19 rejected and that UL and the experts across the  
20 country be given the time and the opportunity to put  
21 together a true consensus proposal that meets all of  
22 the requirements of how generators are used and  
23 provides for maximum possible safety to protect the  
24 electrical workers, the homeowners, and pole linemen  
25 across the country. Please support this motion.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 167

1 Thank you, Mr. Chairman.

2 CHAIR BELL: Thank you. Microphone 5.

3 MR. MCKLOWSKI: Vince McKlowski, speaking in  
4 support of the motion. Mr. Chairman, NEMA supports  
5 this motion. Thank you.

6 CHAIR BELL: Thank you. Microphone 6.

7 MR. SIMMONS: Thank you, Mr. Chairman. My  
8 name is Phil Simmons. I'm speaking for myself. And  
9 I'm speaking in opposition to the motion.

10 The Electrical Section considered this at  
11 some length on Monday and viewed a video and had  
12 quite a bit of opportunity to visit and talk about  
13 this issue. And it appears that after reviewing the  
14 video, the problem was that the folks were using a  
15 generator that does not comply with the safety rules  
16 in the NEC. Because there was no bonding jumper from  
17 the neutral to the enclosure.

18 As a result, GFCI protection would not work  
19 on the generator if installed. And there's no fault  
20 return path for a ground fault for any electrical  
21 equipment supplied by that generator. So it seems to  
22 me, as Mr. Odee described the history of this rule,  
23 that it's pretty carefully crafted and pretty  
24 carefully considered by the code panels for quite a  
25 number of years.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 168

1           And I certainly urge this body to not  
2 support this motion, which certainly seems to be  
3 faulty on its face. It would do nothing to increase  
4 safety. In fact, I'm convinced it would decrease  
5 safety in the workplace. And I'm pretty sure we're  
6 not in favor of that.

7           CHAIR BELL: Thank you. Microphone 5.

8           MR. MANCHE: Alan Manche, speaking for  
9 myself. And I am in favor of the NITMAM of the  
10 motion. As an STP member of the 2201 Committee, I  
11 guess I would like to lend credibility to  
12 Mr. Swiecicki's comments with regard to the fact that  
13 the STP has continually opposed a requirement on all  
14 portable generators to have GFCI.

15           The challenge with this is multi-faulted.  
16 And it's not as simple as adding the language here  
17 that has been put into this particular language. And  
18 I think that's recognized by the fact that Panel 13  
19 has made one decision and Panel 3 has made a  
20 different decision. We have to ask questions. And I  
21 think we have to ask the question, are we enhancing  
22 safety or are we not enhancing safety? There's two  
23 pieces. One is, is it worker safety using it as a  
24 portable means?

25           The other challenge becomes, we have

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 169

1 hundreds of thousands of transfer switches or  
2 transfer equipment installed in homes around the  
3 country up and down the coasts when the hurricanes  
4 come through, the ice storms come through. And if I  
5 end up going to the Lowes and Home Depots and pulling  
6 those portable generators with GFCI's in my home and  
7 I have those systems and now have GFCI protection,  
8 they will trip and not work. And I can guarantee  
9 that a homeowner will figure out a way to get their  
10 power on and put themselves at risk.

11           So there's a worker safety aspect of this,  
12 and there's a homeowner using these portable  
13 generators for other means at risk. And so in order  
14 to address this, this needs to be returned and  
15 thought out further. Thank you.

16           CHAIR BELL: Thank you. Microphone 4.

17           MR. DOWELL: Thank you, Mr. Chairman. My  
18 name is Jim Dowell, representing the International  
19 Brotherhood of Electrical Workers. And I rise in  
20 opposition to the motion on the floor.

21           I would like to first echo some comments  
22 that the previous speaker made. And he talked about  
23 how we're going to use this generator. What he  
24 mentioned with the transfer switches -- and the maker  
25 of this motion was the same maker of comments that

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 170

1     defeated on 13 -- is what is really the heart of this  
2     issue. It is not permitted in the National  
3     Electrical Code to have a premises wiring system and  
4     have it outdoors in a rain-related, weather-related  
5     disaster event and provide other outlets without GFCI  
6     protection. When you take a floating system neutral  
7     generator and you bond it to that 15 or 20 ampere,  
8     125-volt transfer switch, that generator becomes part  
9     of the premises wiring. And it's covered by the  
10    National Electrical Code.

11           The second you do that, you have a grounded  
12    system. Now that homeowner will have one outlet  
13    inside the house hot. And he'll have five or six  
14    more on the generator, which they will use in a  
15    weather-related event with no GFCI protection.

16           It was mentioned earlier that generator  
17    manufacturers aren't in favor of bonded neutral-type  
18    generators with GFCI's. I urge all of you when you  
19    get home to go into Lowes and Home Depot, and you'll  
20    see more portable generators with built-in GFCI than  
21    you will of the variety that we're discussing right  
22    now.

23           I am the safety coordinator for IBEW Local  
24    98. My full-time job is instruction safety. We  
25    support what CMP 3 did 100 percent for safety.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 171

1 Please defeat the motion on the floor. Thank you.

2 CHAIR BELL: Thank you. Microphone 7.

3 MR. EKRODE: Mr. Chairman, my name is Curt  
4 Ekrode. I teach at Waukesha County Technical  
5 College. I rise in support of the motion. Let me  
6 reamplify what Mr. Manche had to say.

7 The panel action limits or mandates the  
8 placement GFCI's on the generator. This action  
9 ignores legacy residential transfer switch  
10 installations. Newly purchased replacement  
11 generators will be applied to these legacy systems.  
12 These systems will automatically trip.

13 This is caused by the bonding of neutral  
14 current and the generator, allowing roughly half of  
15 the neutral current to be carried by the ground. The  
16 generator GFCI will always trip. Resourceful  
17 homeowners -- and we know that they are -- may bypass  
18 the transfer switch and in their ignorance back-heel  
19 the utility service. This causes obvious danger to  
20 utility linemen. Do not limit the position of GFCI's  
21 in these small generator systems. Please vote for  
22 this motion.

23 CHAIR BELL: Thank you. Microphone 6.

24 MR. WEBER: Thank you, Mr. Chairman. Ray  
25 Weber representing myself. I rise in opposition to

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 172

1 the motion in support of the Panel 3 action. In  
2 field observations we're seeing a preponderance at  
3 not the major construction sites but the smaller ones  
4 where they will be using small 5 KW and 10 KW  
5 generators or something of that nature. I heard the  
6 commenter say, "Well, most of the workers have their  
7 own personal GFCI protection incorporated." And  
8 unfortunately I don't get to see that a great deal.  
9 I see a great many trades out there with cords  
10 plugged into these generators.

11 And, in my opinion, if we are going to have  
12 to ground the neutral of those smaller generators, so  
13 be it. It's a safety issue. Also, we deal with a  
14 lot of camping situations where today people go  
15 camping, and they don't put a tent up. We've even  
16 had pontoon boats where they'll put a generator in  
17 the pontoon boat so they can run the margarita  
18 machine or something else like that. So I think it's  
19 far better to have GFCI protection.

20 CHAIR BELL: Thank you. Microphone 1.

21 MR. FLEGEL: Mike Flegel, in support of the  
22 motion. The debate on the Electrical Section got  
23 bogged down in interpretation issues, much as it is  
24 here, partly due to the poor approach that I used in  
25 my presentation at the Electrical Section.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 173

1           Before I had an opportunity to get things  
2 back on track, the opposition to the motion was  
3 passed. The Electrical Section did not get the  
4 information of the Construction Safety Association of  
5 Ontario's study. I think that information is  
6 critical. And as I said, it was supported by the  
7 IBEW as well.

8           They indicate that the position of the GFCI  
9 in the application is critical to whether the system  
10 is floating, that is, whether the generator is not  
11 grounded or whether it is grounded. Unfortunately,  
12 the demonstration that was given to the Electrical  
13 Section did have a floating neutral generator.

14           However, if it was a bonded neutral  
15 generator that was not grounded, it would have the  
16 same results. Those results are that if you have a  
17 bonded neutral generator with GFCI protection and you  
18 do not drive a ground rod, the protection on the  
19 generator is purely decoration. It will never  
20 function. It will function under some very isolated  
21 cases, but in the majority of the cases, it will not  
22 function.

23           It gives the impression that people are  
24 protected by the GFCI's when they are not. The fact  
25 that Mr. Simmons' comments -- the fact that all these

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 174

1 issues that we're discussing just indicates the  
2 complexity of the problem. And I don't think the  
3 panel looked at all the complexities. And I think  
4 another Code-making cycle would help them in  
5 determining that.

6           Please understand the current wording in the  
7 2008 Code requires GFCI protection on all portable  
8 generator output for temporary installations. We're  
9 not advocating doing away with GFCI's. They just  
10 have to be used properly. The GFCI manufacturers  
11 understand that.

12           They are used on portable generators. And I  
13 hope those generators are coming with instructions to  
14 ground them. If they aren't grounding them, there  
15 can be safety issues. Letting it go another code  
16 cycle is not going to hurt worker safety. Making  
17 this move now could hurt it based on that ASO study.  
18 And people have to understand what that study is  
19 about.

20           CHAIR BELL: Thank you. Microphone 4.

21           MR. WILKINSON: My name is Robert Wilkinson.  
22 I seek to call the question.

23           CHAIR BELL: Motion is to call the question.  
24 Do I hear a second. All those in favor of calling to  
25 question, please raise your hand. Thank you. Motion

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 175

1 carries.

2 We'll move directly to the vote on the  
3 motion to accept Comment 3-69. All those in favor of  
4 the motion, please raise your hand. Thank you. All  
5 those opposed. Motion fails.

6 We'll move to the next sequence, which is  
7 70-7. Is there a motion on the floor related to  
8 Motion Sequence Number 70-7?

9 MS. HUNTER: Yes. My name is Christel  
10 Hunter with Alcan Cable. I move to accept Comment  
11 6-43.

12 CHAIR BELL: The motion is to accept Comment  
13 6-43. Is there a second? I hear a second. Please  
14 proceed.

15 MS. HUNTER: Thank you. The language in  
16 Section 310.15(B)(2)(c) is based on data collected  
17 during a study performed in Las Vegas. This study  
18 has run for several years now and produced a large  
19 amount of data. The paper that was published based  
20 on this data asserts that conductors on rooftops will  
21 fail and create a safety risk due to the high heat  
22 due to solar radiation. No confirmed real-live  
23 failures attributed to these conditions have been  
24 presented to the panel.

25 Three primary types of heating have been

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 176

1 identified that affect conductors on rooftops: heat  
2 generated from the conductors underload, ambient  
3 temperature, and solar radiation. The Code deals  
4 with the conductor generated heat by properly sizing  
5 the conductor for ampacity. It deals with ambient  
6 temperatures by applying correct factors for  
7 ampacity.

8           So the question I believe this submitting  
9 organization was trying to answer is how do we deal  
10 with solar radiation, or do we need conductors to  
11 have a maximum operating temperature as indicated in  
12 the tables? This temperature is based on the type of  
13 insulation that gives us guidance on the conductors.  
14 It states that no conductor shall be used in such a  
15 manner. There is no definition for operating  
16 temperature or maximum operating temperature in the  
17 NEC.

18           However, the language in 310.10 is followed  
19 by a fine-print note that clarifies how to apply this  
20 requirement. It states that the temperature rating  
21 of a conductor is the maximum temperature at any  
22 location along its length that the conductor can  
23 withstand over a prolonged time period without  
24 serious degradation.

25           What is a prolonged period of time? I

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 177

1 believe it's more than a few hours a day, a few days  
2 a year, when considering the lifetime of the  
3 conductor. The NEC does not define this period of  
4 time. So we do have guidance from other established  
5 industry sources. The National Electrical  
6 Manufacturers Association has published a power cable  
7 standard designating WC 70. Appendix C in this  
8 standard provides definitions for maximum conductor  
9 temperature both continuous operation and emergency  
10 overload conditions.

11           The difference is that emergency overload  
12 specifies higher temperatures and a specific number  
13 of hours per year. Appendix C of that document  
14 addresses emergency overload for conductors. Most of  
15 the conductors used on rooftops carry a continuous  
16 operation temperature of 90 degrees C. The NEMA  
17 document indicates that these conductors can operate  
18 at 130 degrees C for up to a hundred hours a year.

19           Another relevant resource cites Standard  
20 242, which also references 130 degrees C for about a  
21 hundred hours a year. It states that emergency  
22 operating overloads may reasonably be applied to  
23 conductors within the time of temperature rating.  
24 The capabilities should be made with the application  
25 of protection of the conductors.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 178

1           While slightly different than the NEMA  
2 standard, the message is the same. Conductors are  
3 perfectly capable of operating well over the stated  
4 continuous operating temperature for certain periods  
5 of time without degradation.

6           The data provided to support this proposal,  
7 the language that's in the code now, indicates only  
8 temperatures experience inside a conduit without live  
9 conductors. To determine the operating temperatures  
10 for various sizes of cable, it would inquire testing  
11 live conductors for analysis of the conductor's cable  
12 ampacity software.

13           I serve on Code-making Panel 6. So in  
14 preparation for the comment phase of the 2011 NEC, I  
15 used cable design software to determine what  
16 temperature would be experienced by a conductor sized  
17 according to the 2005 NEC. But with the temperature  
18 rating indicated in 310.15(B)(2)(c), I found that  
19 using 107 Fahrenheit, which is the 2 percent design  
20 criteria for Las Vegas, as specified by ASHRAE, a 90  
21 degree C conductor in a continuous flow would exceed  
22 its continuous operations temperatures only if it is  
23 lying flat on the roof fully loaded. The  
24 temperatures experienced will not even be close to  
25 those that NEMA and IEEE says that these conductors

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 179

1 can withstand 100 hours per year.

2           Additionally, conduits are normally  
3 installed on blocks or risers which lift them 3 or 4  
4 inches off the rooftops. The conductors do not lay  
5 on the roof and will never exceed even their  
6 continuous operating temperature, and no decrease in  
7 life of the conductors should be expected.

8           In summary, there's no physical evidence nor  
9 any other reason to believe that the 310.15(B)(2)(c)  
10 requirement is necessary. This code requirement  
11 increases cost but does not increase safety. Please  
12 support this motion. Thank you.

13           CHAIR BELL: Thank you. Ladies and  
14 gentlemen, I do want to point out here that Motion  
15 Number 70-7 and 70-8 are related motions as indicated  
16 in the Motions Committee Report. So the actual  
17 motion will be representative of the action on Motion  
18 70-8. Mr. Carpenter.

19           MR. CARPENTER: Thank you. I defer to the  
20 Chairman of Panel 6.

21           MR. KLEIN: I'm Scott Klein speaking as  
22 Chair on behalf of the voting actions of Panel 6.

23           This section was added to the code during  
24 the 2008 cycle. Its edition is based on the detailed  
25 and documented experimental evidence of increased

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 180

1 temperature inside the raceway caused by solar  
2 energy. It was given both as the submitted report  
3 and as a presentation of the submitter with a  
4 question and answer period during the 2008 code cycle  
5 meetings. It passed all requirements of voting and  
6 confirmation by NEC and NFPA.

7 Motion 70-7, this motion with Comment 6-43  
8 states that evidence of failures of rooftop  
9 insulations has not been presented. However,  
10 accelerated degradation of insulation due to  
11 increased temperature is the reason for derating of  
12 conductor ampacity. And this process in the code has  
13 a very long history.

14 For Sequence 70-8, Comment 6-44, that  
15 presents a personal opinion that the evidence given  
16 was insufficient to merit adding this section as the  
17 general case. It also attempts a correlation between  
18 exposed cables and conductors installed in raceways.

19 However, the physics of conductors inside  
20 conduits may be significantly different than the  
21 physics of exposed cable. While experimentation may  
22 still be a documented need, that evidence has not  
23 been presented and accepted.

24 The evidence of the substantiation submitted  
25 to and accepted by the panel for actions passed at

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 181

1 the proposal and comment stages involved only  
2 conductors and cables inside conduits. Data on other  
3 types of raceways or on exposed cable installations  
4 was either not submitted or was not accepted.  
5 Passing this motion would remove this section which  
6 requires adjustment of conductor ampacity. Rejecting  
7 the motion leaves the heat related adjusted  
8 requirements in place.

9 CHAIR BELL: Thank you. Further discussion?  
10 Microphone 5.

11 MS. HORTON: Thank you, Mr. Chairman. Pat  
12 Horton representing STI. And I'm speaking in  
13 support. We support what Christel has presented  
14 here. We didn't fight this too much.

15 In fact, we sort of supported it when it  
16 went into the Code. But as we've seen over these  
17 past few years and actually by action of the code  
18 panels and not being consistent in what they decided,  
19 we believe that the proper thing is to take it out of  
20 the Code and that it really is a design  
21 consideration.

22 And I think that CDA and the testers, they  
23 are to be commended for this work because it supplies  
24 good information for design and charts to be  
25 developed. So I can't think of a reason we have seen

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 182

1 problems like this, how this could have happened, if  
2 people are using designs and have used designs over  
3 the years.

4 So we would ask that you vote affirmative on  
5 this. And we believe it's a good decision. And  
6 there are other points that I believe other people  
7 are going to make to support that. Thank you very  
8 much.

9 CHAIR BELL: Thank you.

10 MR. MERCERE: Dave Mercere, Southware  
11 Company, speaking in opposition. A lot of  
12 information was given. And just to address one  
13 piece. The emergency overload that was referenced is  
14 not included in the NEC. One critical thing to  
15 understand is that we have a predominant product, and  
16 that is a thermal plastic product. Its properties  
17 are far less than a polystyrene product.

18 The principal here is how do you take into  
19 account the high temperature rise to solar absorption  
20 to the ambient temperature. In the Code it clearly  
21 requires, in 110.3(A)(5), that you take into account  
22 the high temperature rise. So you have to take into  
23 account both 110.3(B). The product is labeled for 90  
24 degrees to a maximum, and the listing only takes that  
25 into account. So it hasn't been evaluated for higher

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 183

1 temperatures. Also, in 300.2(B) you are required to  
2 be within the ten-hour limit of the product.

3 So what's in the Code, what the panel has  
4 accepted three cycles now, is a straightforward way  
5 to add a temperature rise to solar absorption to the  
6 ambient temperature.

7 CHAIR BELL: Thank you. Microphone 7.

8 MR. JACKSON: Thank you, Mr. Chair. Ryan  
9 Jackson, Mikeholt Enterprises, speaking in support.

10 Ladies and gentlemen, we have a rare  
11 opportunity to look at history today and to learn  
12 from history. What I'd like you to do is consider  
13 how many buildings there are that have metal raceway  
14 systems on the roof, how many thousands of buildings  
15 and how many millions of feet of conductors are  
16 inside of those raceways.

17 Now, I'd like you to remember the fact that  
18 this is a common practice and a practice that has  
19 occurred for decades upon decades. So bearing that  
20 in mind, I would like to ask how many documented  
21 incidents, how many fires, how many tragedies have  
22 occurred in the installations that were wired before  
23 the 2008 Edition of the Code.

24 Now, I don't have all of the answers. But  
25 in front of me is the Report on Comments. On Comment

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 184

1 6-30, and according to Technical Committee Member  
2 Ms. Hunter, I quote, "The fact that this research was  
3 performed by a trade organization with no evidence of  
4 insulation failure or verification by an independent  
5 third party throughout the entire process" makes the  
6 submitter's suggestion in his last sentence the  
7 appropriate action being referred to here.

8 Ladies and gentlemen, I believe that test  
9 data is a very useful thing, and I certainly think  
10 that it has its place. However, I don't think that  
11 we should ignore history and that we should ignore  
12 the tract records. The fact of the matter is if this  
13 was a real problem, we would be talking about fire.  
14 We would not be talking about test data. Thank you  
15 very much.

16 CHAIR BELL: Thank you. Microphone 6.

17 MR. SIMMONS: Thank you very much. My name  
18 is Phil Simmons, speaking against the motion,  
19 speaking on behalf of the National Armored Cable  
20 Manufacturer Association. And that is a trade  
21 association of manufacturers that produce type A/C  
22 and type N/C cable. And they are not in favor of  
23 removing this requirement from the NEC.

24 I think it's really a simple issue.  
25 Sometimes we make simple issues far too complex. And

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 185

1 I want you to walk outside with me today or any other  
2 sunny day and have your car parked in a covered  
3 parking stall. It's been there for several hours.  
4 It's been there overnight and through the morning.  
5 And then I'd just like to have you hold your hand on  
6 the sheet metal of that car and then drive it out and  
7 park it in the sun for a couple of hours and go back  
8 and repeat that hand-temperature test. And you're  
9 probably not going to be foolish enough to do that  
10 because you know that metal has absorbed a  
11 significant amount of energy from the sun and has  
12 gotten really hot. That's what this test has proven.  
13 And there have been documented fires.

14           One of the issues that I think we have in  
15 NFPA over the years is that we oftentimes have a  
16 really hard time or difficult task in trying to  
17 collect identifiable data. Many times it's just not  
18 available or it is not reported properly. So we end  
19 up with data that's really not useful. But I think  
20 the Code Panel over the years has done the right  
21 thing. They've accepted the science. And I don't  
22 think any of us can really refute the facts that this  
23 is the right thing to do. Thank you.

24           CHAIR BELL: Thank you. Microphone 8.

25           MR. LINDSAY: Thank you. Travis Lindsay,

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 186

1 with Travis Lindsay Consulting Services. I'm  
2 speaking in opposition to the motion.

3 I'm the technician that did the research  
4 that is a result of the code change that was  
5 published in 2005 and upgraded in 2008 and carried  
6 through to 2011 codes. I'd like to speak to a couple  
7 of issues.

8 Firstly, for the third-party review, we did  
9 hire a nationally recognized testing laboratory which  
10 reviewed our processes. It also reviewed our  
11 laboratory processes. We did receive a letter of  
12 acceptance from them for application of ISO 17.025,  
13 which is the laboratory standard for testing. We  
14 also have published an IEEE paper, which is a peer  
15 review paper. And so it has had industry review and  
16 approval.

17 NEC 310 requires that conductors are not  
18 used past their temperature ratings. The temperature  
19 ratings are given. The maximums are given.  
20 Manufacturers will tell you that 93 degrees C is a  
21 maximum, that emergency temperatures are not included  
22 in the National Electrical Code.

23 If you speak to the power company people,  
24 they'll tell you that if they use the IEEE  
25 Recommendations for Emergency Conductor Temperatures

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 187

1 in Emergency Uses, they have to watch the length of  
2 operating time of that conductor so that they can go  
3 in and replace it. Those people have the ability to  
4 be periodically out there and replace one of these  
5 conductors that's been damaged. They have the option  
6 to drive it over temperature. They have total  
7 control over their system. So they can do that. So  
8 in terms of us providing that type of protection  
9 under the National Electric Code, it is not possible.

10 Speaking to the failures issue. This test  
11 was about gathering temperature data from the sun.  
12 We did not load the conductors because then you would  
13 have to compare the loaded nature of the conductor to  
14 the ambient temperature. We were about collecting  
15 the data.

16 The Code also says if a conductor is in a  
17 hot atmosphere, then it has to be derated or adjusted  
18 according to that temperature. So all we were doing  
19 is providing that temperature. The code for 50 years  
20 provided that correction. If you're in a boiler room  
21 or in other hot areas, you have to derate. You have  
22 to adjust the conductor. So we did nothing except  
23 providing you the data to do your job.

24 So the fact that we didn't try to point out  
25 failures is anomalous. It means nothing. It has

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 188

1 nothing to do with the discussion. Thank you very  
2 much.

3 CHAIR BELL: Thank you. Microphone 5.

4 MR. LLOYD: Richard Lloyd speaking for  
5 myself against the motion -- or for the motion I  
6 should say. I guess I'm going to speak of a couple  
7 of issues that's a little bit different.

8 I've been to the test site. I don't dispute  
9 the readings that Travis got. I do believe it should  
10 have been done by a third-party agency rather than a  
11 manufacturer of a product that's not covered.

12 The issue I see is if you have conductors on  
13 this rooftop, they're in free air, and they're  
14 subject to a much different environment than they are  
15 in a fenced-in backyard down low with roof coverings  
16 close to the surface of the conduit.

17 Now, what's happened here over the evolution  
18 of this product is it's punitive to conduit. First  
19 they put the word "raceway" in. And then the  
20 Committee thought, Well, no, this is going to be  
21 conduit, but in realty they checked a few types of  
22 conduit, not all of them. Certainly not all of the  
23 30 various raceways. And they checked cable.  
24 However, they did not put cable into the code  
25 proposal. This time the Panel had dozens of

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 189

1 proposals to add cable which was tested. In fact,  
2 the last speaker that did the test spoke to adding  
3 cable.

4           Now, what's happened here is it's become  
5 punitive to conduit. They have not considered the  
6 free air around it. And, in addition, as one of the  
7 speakers already mentioned, have you ever seen a  
8 failure? I've opened up light fixtures in my house  
9 or in houses. I am a master electrician and a  
10 contractor, or have been. And you'll see the  
11 elasticizer gone out of wire. It's brittle. It  
12 breaks.

13           By the same token, I've pulled wires to air  
14 conditioning and so forth on hot roofs in Arkansas  
15 and Arizona. I've never seen the wires so hot that  
16 the elasticizer has gone out. That indicated to me  
17 that wire was nowhere near failure. So in the real  
18 world, it's not a problem. In a test scenario that  
19 they run in the backyard of Travis Lindsay's home  
20 surrounded by a concrete fence, they do get high  
21 readings. I don't dispute the readings he got. I do  
22 dispute the real world evidence, and my experience of  
23 never having seen or heard about a failure due to  
24 this problem.

25           I suggest that we accept this NITMAM 70-7

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 190

1 and go back to what makes sense. Inspectors are not  
2 enforcing this consistently across the country, and  
3 it is punitive to conduit, even though cable was  
4 tested as was only a few of the conduit types.

5 CHAIR BELL: Thank you. Microphone 4.

6 MR. GENARO: Florence Genaro, A&C Cable  
7 Systems, speaking against the motion. The Code has  
8 requirements expressly designed to protect electrical  
9 wiring. Amongst them are selection of overcurrent  
10 protection, selection of the ampacity, derating based  
11 on bundling, derating based on elevated ambient  
12 temperature. It's intuitive and obvious that solar  
13 heating raises the ambient temperature. Raising it  
14 by solar exposure protects the wiring and keeps it  
15 from operating beyond its temperature limits.

16 The present Code provides the means for  
17 derating installations on rooftops exposed to the  
18 sun. The requirements for derating is based on years  
19 of testing. And data has been thoroughly reviewed  
20 and accepted by the Code Panel and the public for the  
21 last six years. The NITMAM should not be accepted.  
22 Thank you.

23 CHAIR BELL: Thank you. Microphone 7.

24 MR. WILKINSON: My name is Robert Wilkinson  
25 with IEC. I call the question.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 191

1           CHAIR BELL: There's a motion to call the  
2 question. I heard a second. All those in favor of  
3 calling to question, please raise your hand. Thank  
4 you. All those opposed. The motion passes.

5           We'll move directly to the vote on the  
6 motion on the floor, which is to accept Comment 6-43.  
7 All those in favor of the motion, please raise your  
8 hand. Thank you. All those opposed. Motion fails.

9           Let's move on to the next sequence, which is  
10 70-9. Is there a motion on the floor related to  
11 Motion Sequence 70-9? Microphone 5.

12           MS. THOMPSON: Mr. Chairman, Elaine Thompson  
13 speaking on behalf of Steel Tube Institute. We do  
14 not wish to pursue this motion, this NITMAM.

15           CHAIR BELL: The representative for this  
16 motion, the authorized maker of the motion, has  
17 chosen not to pursue it. So we move on to the next  
18 sequence, which is Sequence Number 70-10. Is there a  
19 motion on the floor related to Motion Sequence 70-10.

20           MR. HOLUB: Mr. Chairman, Richard Holub  
21 representing the American Chemistry Council. In this  
22 case I'm not speaking on behalf of the American  
23 Chemistry Council. I would like to make a motion  
24 that we accept an identifiable part of Comment 6-55.

25           CHAIR BELL: The motion on the floor is to

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 192

1 accept Comment 6-55. Is there a second? Please  
2 proceed.

3 MR. HOLUB: Comment 6-55 was brought to the  
4 panel with the intent to correct an obvious  
5 misunderstanding in the use and application of  
6 service entrance cable. When service entrance cable  
7 is used as a feeder, some people are misinterpreting  
8 the code today as not requiring deratings for perhaps  
9 more than three current-carrying conductors in a  
10 conduit raceway. We're running through a hot attic  
11 space where the ambient temperature is above its  
12 rating.

13 I think the Panel reviewed this and modified  
14 the comment accordingly and made a sound judgment in  
15 trying to correct this misinterpretation. The one  
16 problem that was pointed out during the voting stage  
17 was one word in the last sentence of B(7)(B). The  
18 word "corrected" is actually incorrect, and we'd like  
19 to drop that word and accept the comment and the rest  
20 of the work the panel did. We spent close to eight  
21 hours reviewing this and making modifications on this  
22 comment. We'd like to proceed with it.

23 CHAIR BELL: Thank you. Mr. Carpenter.

24 MR. CARPENTER: I'd like to defer to the  
25 Panel Chair of Panel 6, Scott Klein. Microphone 8.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 193

1           MR. KLEIN: Scott Klein speaking as Chair on  
2 behalf of the voting actions of Panel 6. The  
3 proposal on which this comment was based was  
4 developed to resolve interpretation problems without  
5 changing the technical requirements of the section.  
6 The proposal was passed with the unanimous ballot,  
7 received only affirmative ballot comments from the  
8 voting members. Both were concerned with the  
9 effectiveness of the proposal wording.

10           The proposal itself is certainly flawed and  
11 wording adjustments to it are without a doubt  
12 required. As a matter of full disclosure based on  
13 the 11-0 proposal vote comment, Comment 6-55 was  
14 written and submitted by me as an attempt to cover  
15 all of the section issues I've heard in the proposal  
16 meeting and saw as flaws in the proposal.

17           The section originally applied only to  
18 service conductors allowing a conductor with a lower  
19 table ampacity to be installed for a service rating  
20 which is up to 20 percent larger than the conductor's  
21 normal ampacity, provided that a high temperature  
22 insulation was utilized.

23           Code cycles later it was proposed and  
24 accepted that the same allowance for this 20 percent  
25 maximum diversity could be similarly applied to

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 194

1 feeder conductors, which were also sized in  
2 accordance with the service rating, the whole load of  
3 the dwelling. The discussions of Panel 6 made it  
4 clear that there is difficulty in applying this  
5 section regarding allowing smaller feeder conductors  
6 for a particular individual dwelling unit.

7           While the original justification basis for  
8 this section could not be found, it is clear and, as  
9 far as I know, not disputed that the reason for the  
10 allowance is the long and well documented recognition  
11 that Article 230, Sizing of the Service Rating,  
12 includes a significant amperage which is subject to  
13 diversity when considering the whole load of a  
14 dwelling.

15           This allowance of a 20 percent undersized  
16 conductor has many years of successful history.  
17 However, some interpretations of this section have  
18 held that other normally applied adjustment factors  
19 are somehow no longer required to be applied. This  
20 would mean that adjustments, such as the long  
21 established requirements for the quantity of current  
22 carrying conductors or high ambient temperatures, may  
23 be ignored under. This could allow 40 to 60 percent  
24 undersizing of the conductors.

25           After very long and difficult discussions

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 195

1 during the CMP meeting, the panel adjusted the  
2 wording, and Comment 6-55 was arrived at. The  
3 comment passed voting at the comment meeting, but  
4 failed ballot by 7 to 4. Passing this motion would  
5 incorporate the Panel's wording with the deletion of  
6 the one word. Not passing this motion would place  
7 the troubled 2008 wording into the 2011 code.

8 CHAIR BELL: Thank you. Further discussion?  
9 Microphone 4.

10 MS. HUNTER: Thank you. I'm Christel Hunter  
11 with Alcan Cable. And I'm speaking against the  
12 motion. I am an alternate member of Panel 6. So I  
13 was there for all of the deliberations. And I think  
14 this was a simple proposal that spiraled out of  
15 control. The panel attempted to clarify this section  
16 because there were so many questions from the 2008  
17 NEC language. Instead, we created a completely  
18 different language that is even more confusing. And  
19 we've introduced unsubstantiated technical changes.

20 For instance, this language now make the use  
21 of Table 310.15(B)(7) mandatory instead of optional  
22 with no substantiation. The language now prohibits  
23 the use of this section for main power feeders for  
24 multifamily dwellings with no substantiation. There  
25 were no safety concerns addressed by this change.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 196

1 And now we created a conflict with Article 338 and  
2 the actions taken by Panel 7 in the comment phase.

3 We need a task force to figure this out and  
4 get this language worked out. Trying to accomplish  
5 this in the panel meeting, which we spent seven or  
6 eight hours talking about this, proved to be  
7 fruitless.

8 A couple of comments made in the original  
9 motion or substantiation. This code language is not  
10 limited to service entrance cable. This applies to  
11 any type of cable method that's indicated in the  
12 article. The service entrance cable temperature is  
13 taken care of by Panel 7 in the writing methods. So  
14 service entrance cable is not at issue in this  
15 language. It's the application of this table to  
16 sizing of service cables for residential applications  
17 and the feeders. Thank you.

18 CHAIR BELL: Thank you. Microphone 8.

19 MR. TOMASINO: Al Tomasino, Schneider  
20 Electrical. I am opposed to the motion.

21 And the rationale, once again I think  
22 reiterated by our previous speaker, is that it makes  
23 it mandatory to use those tables. So if you have a  
24 voltage drop problem or you have energy efficient  
25 problems, guess what? That table says it's mandatory

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 197

1 to use those tables in accordance with those numbers.  
2 So I don't think this is a good thing to move  
3 forward.

4 CHAIR BELL: Thank you. Microphone 4.

5 MR. MERCERE: Dave Mercere with Southware  
6 Company, and I am opposed to the motion. I agree.  
7 2008 is very difficult in my work with electrical  
8 inspectors. It seems they have chosen to go on and  
9 have come to terms with the 2008 Code.

10 Unfortunately, it seems to be split on how  
11 to interpret that. If we move to this right here, we  
12 will just recreate confusion and have that in another  
13 cycle. And as previously mentioned, there is a lot  
14 of work to be done to help clarify this and make this  
15 much simpler. So we need to vote against this and  
16 work things out in the next cycle.

17 CHAIR BELL: Thank you. Microphone 8.

18 MR. MCKLOWSKI: Vince McKlowski, National  
19 Electrical Manufacturers Association. Mr. Chairman,  
20 NEMA opposes this motion. Thank you.

21 CHAIR BELL: Thank you. Any additional  
22 comments, Mr. Carpenter?

23 MR. CARPENTER: No.

24 CHAIR BELL: Seeing no one else at the  
25 microphone, we'll move to the motion on the floor,

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 198

1     which is to accept an identifiable part as modified  
2     by the Panel for Comment 6-55. All those in favor of  
3     the motion, please raise your hand. Thank you. All  
4     those opposed. Motion fails.

5             Next motion sequence is Number 70-11. Is  
6     there a motion on the floor related to Motion  
7     Sequence Number 70-11? Microphone 7.

8             MR. HORN: My name is Gerald Horn, and I'm  
9     with Spencer Research & Development. My motion is to  
10    have accepted 7-34.

11            CHAIR BELL: The motion on the floor is to  
12    accept Comment 7-34. Is there a second?

13            UNIDENTIFIED SPEAKER: Second.

14            THE INTERPRETER: There is a second. Please  
15    proceed.

16            MR. HORN: This product is a new product  
17    unfamiliar to most of you who's been voting on it.  
18    And if I'm not breaking any rules, I would like my  
19    partner to pass out some samples to see what you're  
20    voting on. Is that all right, or no?

21            CHAIR BELL: No, that's not acceptable.

22            MR. HORN: Okay. All right. As part of its  
23    rejection statement, Panel 7 stated that it's not  
24    necessary to list every method of securing and  
25    supporting end cable. However, 334.15(C) includes

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 199

1 any type of securing and supporting cable except  
2 drilling holes through basement ceiling joists or the  
3 use of running boards.

4           Electricians began drilling joists and tube  
5 wiring at the beginning of the last century. A  
6 hundred years later we're still boring holes through  
7 basement ceiling joists. Arguments put forth by some  
8 panel members were that the homeowner's electrician  
9 might put a product called "Wackenblock" in the  
10 center of the basement ceiling, causing problems with  
11 finished ceilings or that all existing installation  
12 rules for NM cable would have to be changed. But  
13 none of the arguments are based on fact.

14           Our installation instructions require that  
15 the Wackenblock be installed in every joist with M  
16 the cable that crosses perpendicularly and that its  
17 use is restricted to the first 12 inches next to the  
18 main center support beam in the basement.

19           This restriction makes it very difficult to  
20 use a clothes hanger due to the hanger using the main  
21 center beam. This area generally contains the  
22 ductwork and plumbing pipes, both of which are  
23 installed over the joists. We further state that all  
24 existing installation requirements for NM cables will  
25 still apply.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 200

1           Should the NEC accept my proposal, it should  
2           also accept the Wackenblock. There is not an  
3           installer who wouldn't rather spend 30 minutes  
4           installing Wackenblocks on 40 ceiling joists as  
5           opposed to spending three hours drilling 320 holes in  
6           those same 40 joists. Pulling NM cable through a  
7           straight line of Wackenblock requires a fraction of  
8           the effort as opposed to pulling cable through the  
9           slanted holes of the wood joists.

10           Because of the reduced labor, the  
11           Wackenblock cost less for the installer. At a time  
12           when America is trying to rebuild the housing  
13           industry, this is definitely a positive. Even of  
14           more importance, we have not destroyed the integrity.

15           Since our meeting here is about the safety  
16           of this product, let me walk you through the  
17           comparison to the running board, the only alternative  
18           offered by the NEC to boring holes. UL listed this  
19           product. So its physical characteristics should not  
20           be a safety concern.

21           The running board on the other hand is not  
22           restricted to any particular location. In today's  
23           real world, if the running board were used to staple  
24           the 20-plus NM cables across the basement ceiling, it  
25           would have to be over 12 inches wide. In order to

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 201

1 finish the basement ceiling with running the boards  
2 installed with the 20-foot cables, 2-by-2 strips  
3 would have to be installed before the drywall could  
4 be applied. This leaves 20-plus cables concealed  
5 from view only a quarter inch above the drywall with  
6 no metal to protect the cable from future  
7 penetration. This can hardly be considered safe by  
8 the NEC. The only reason this has never become an  
9 issue is that the running board is not an  
10 economically viable alternate to boring holes.  
11 Modern technology is offering so much more for  
12 today's residential electricians in security systems.  
13 It seems a shame to waste time boring holes that are  
14 not necessary and even detrimental to the wood  
15 joists.

16           Many members of Panel 7 were in favor of my  
17 product. But the concern was to restrict other  
18 products from being used that are presently in use  
19 for other applications, such as staples, K hooks, et  
20 cetera.

21           I would suggest a few additional words in my  
22 proposal to solve this. In addition to my language,  
23 I would add this. "This devise per its UL listing  
24 must be surrounded by 16-gauge metal to prevent  
25 penetration by nails or screws in the area of the

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 202

1 joists covered by the device."

2 CHAIR BELL: Thank you. Mr. Carpenter.

3 MR. CARPENTER: Yes, thank you. I'd like to  
4 defer to the Chair of Panel 7, Michael Smith.

5 MR. SMITH: Michael Smith, Chairman of  
6 Code-making Panel 7 speaking in favor of the Panel's  
7 action on Comment 7-34. We deliberated for quite  
8 some time trying not to speak to the product, but  
9 trying to speak to the wording and also trying to see  
10 where the substantiation of keeping physical damage  
11 or preventing physical damage to the conductor  
12 itself.

13 Wiring the conductor to the surface area or  
14 below the surface of the joist was a very strong  
15 concern in trying to protect that conductor between  
16 the joist area. The other concern that was brought  
17 up was the other listed type of devices. Therefore,  
18 the panel voted on the comment 11-1 to reject the  
19 comment. That's basically all I had to report.  
20 Thank you very much.

21 CHAIR BELL: Thank you. Further discussion  
22 at microphone 4.

23 MR. LADART: Yes, sir. My name is Sam  
24 LaDart. And my affiliation is with the IBEW. I'm  
25 also a Technical Committee member of Panel 7. I'm

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

1 against the motion. This is a safety issue.  
2 334.15(C) regulates the installation requirements of  
3 type NM cable in unfinished basements and cross  
4 faces.

5           The intent of 334.15(C) is to provide  
6 mechanical protection for the cables. By requiring  
7 cables smaller than three Number 8 AWG or two Number  
8 6 AWG, to be recessed within a framing cavity through  
9 the use of bored holes. The suggested change to the  
10 Code would allow the cables to be run as exposed  
11 cables across the face of framing members only if  
12 they are installed using a listed safety device that  
13 is designed for the support of NM cable and located  
14 within 12 inches of the main center support beam.

15           In order to accommodate the proposed usage  
16 of this new listed device, the Code must be changed.  
17 We must continue to require that the cables be  
18 protected as currently required. Type NM cable has a  
19 very good safety record as a result of its rigid  
20 safety requirements.

21           Most importantly, let's consider the  
22 consideration of use. This section to the code also  
23 includes cross faces. Cross faces in basements have  
24 no specified height from floor to ceiling. There  
25 could exist an earth floor or a concrete floor.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 204

1           Cables that are damaged or nicked because of  
2 these types of situations that exist pose some very  
3 serious safety issues. I would highly recommend that  
4 you vote against this motion.

5           CHAIR BELL: Thank you. Microphone 7.

6           MR. WILKINSON: My name is Robert Wilkinson  
7 with IEC. Call the question.

8           CHAIR BELL: Motion on the floor to call the  
9 question. Is there was a second?

10          UNIDENTIFIED SPEAKER: Second.

11          CHAIR BELL: For information purposes, I  
12 will note that there was at least one individual at  
13 the microphone. All those in favor of calling the  
14 question, please raise your hand. Thank you. All  
15 those opposed. The motion carries.

16          We'll move to the motion on the floor, which  
17 is to accept Comment 7-34. All those in favor of the  
18 motion, please raise your hand. All those opposed.  
19 Motion fails.

20          We'll move on to the next motion sequence.  
21 Is there a motion on the floor related to Motion  
22 Sequence 70-12?

23          MS. TOMASINO: Alicia Tomasino speaking on  
24 behalf of Carlo Compagnone, Compa Covers, Inc., out  
25 of Boston, Massachusetts. I move that you accept

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 205

1 Comment 9-26.

2 CHAIR BELL: Motion on the floor is to  
3 accept Comment 9-26. Is there a second? I hear a  
4 second. Please proceed.

5 MS. TOMASINO: Thank you. The provisions  
6 contained in the Code in relation to the proposal are  
7 far from adequate to safeguard persons and property.

8 In 2007 there would not have been 16,380  
9 reported noncompliance home structure fires involving  
10 premises wiring group. If the Code provided adequate  
11 protection, would 458 civilians have been injured,  
12 145 civilians have died, and almost \$500 million in  
13 property damage have occurred in 2006 alone as a  
14 result of these fires? Premises wiring group is  
15 defined by the NEC as the wiring between the power  
16 source and the outlet and does not include cords,  
17 plugs, and light fixtures. This data is provided by  
18 the NFPA and is contained in the 2009 article, "Home  
19 Electrical Fires" by John R. Hall.

20 Mr. Hall notes in his article that the  
21 number of fires decline for wiring as one moves from  
22 inside the house along the wiring towards the  
23 connections to the utility poles outside the house.  
24 According to this analysis, the majority of fires  
25 begins within the outlet box, which is the one area

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 206

1 of premises wiring that the NEC provides no specific  
2 guidelines for.

3           It is obvious in reviewing these statistics  
4 that Code-making Code Panel 9 in their panel  
5 statement in rejecting this proposal should not be  
6 saying, quote, "If it becomes necessary to cover the  
7 boxes, there are many acceptable methods."

8           The panel must recognize that it is  
9 necessary to include a provision requiring that  
10 electrical boxes be covered after their installation  
11 because the current provisions of the Code are not  
12 adequate to prevent foreign materials from entering  
13 electrical boxes, damaging the wiring inside and  
14 causing fires.

15           This proposal has not been accepted because  
16 it is argued that the provisions contained in the  
17 code are adequate to address this problem. Section  
18 110.12 dealt with the situation adequately with 61  
19 percent of home structure fires being caused by  
20 premises wiring group. Section 110.12 states that  
21 there shall be no damaged parts that may adversely  
22 affect safe operation or mechanical strength of the  
23 equipment. However, wires in the electrical box are  
24 highly vulnerable to damage, particularly during the  
25 construction phase. With so much demand on the

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 207

1 construction industry, subcontractors do what is best  
2 and fastest for them. Whether it's the plumber, the  
3 board hanger, the plasterer, the painter, or spray  
4 foam insulator, their only concern is getting their  
5 job done. Other contractors have no concern for the  
6 damage they cause, especially where it's unseen, such  
7 as in the device box.

8           The NEC must take action and mandate the use  
9 of cover plates over device boxes in order to take  
10 control over these safety issues. It's unclear why  
11 the NEC contains provisions specifically for  
12 protection of the wiring against physical damage at  
13 almost all points of vulnerability throughout the  
14 construction process but does not contain a single  
15 provision that adequately addresses the wiring that's  
16 exposed for weeks and months on a job site.

17           It's interesting that by failing to require  
18 that a cover be placed over the device box, other  
19 articles in the NEC are violated. 110.12 provides  
20 that equipment must be installed in a neat and  
21 workmanlike manner. However, wires left exposed once  
22 contaminated by paint, plaster, power riders, or  
23 other materials must be cleaned out or cut by the  
24 electrician. And the requirements of 110-12 are not  
25 met since the work is no longer neat and workmanlike.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 208

1           Article 250.5(A)(5) establishes provisions  
2   for effective ground fog current path.  When the  
3   ground fog gets covered by foreign substances, it's  
4   not as strong as it should be, and it's ultimately a  
5   safety issue.  Section 314 requires 6 inches of free  
6   flowing conductor be left in the box.  But when the  
7   wire is compromised, this free flowing conductor must  
8   be cut in order to --

9           CHAIR BELL:  1 minute left.

10          MS. TOMASINO:  I'm going to leave you with  
11   this final thought.  If you are building or  
12   renovating your home, would you want your loved ones  
13   living there knowing they could be one of the far too  
14   many injured or killed each year as a result of  
15   damaged wiring lurking behind those outlets.

16          Mr. Compagnone and I thank you for the  
17   privilege of appearing before you today.  I  
18   respectfully request that you reconsider this  
19   proposal and accept it into the National Electrical  
20   Code.

21          CHAIR BELL:  Mr. Carpenter.

22          MR. CARPENTER:  Yes.  I'd like to recognize  
23   that Keith Laughlin, a member of Code-making Panel 9  
24   will speak for the Panel.

25          MR. LAUGHLIN:  Yes.  Keith Laughlin here on

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 209

1    behalf of our chairman, who had some health issues  
2    and could not attend.  And at this point I'm not sure  
3    which of us is the healthiest, but I do represent  
4    Panel 9.

5            We did consider this motion very thoroughly.  
6    Again, I commend the submitter of the proposal for  
7    the product that is being discussed here.  I felt  
8    like we could not limit it to just this product.  And  
9    also, as has been stated, this is adequately covered  
10   in 110.12(B).  The proposal was rejected 12 to 0  
11   along with the comment that is being issued here or  
12   discussed.

13           CHAIR BELL:  Thank you.  Microphone 7.

14           MR. CARPENTER:  My name is Robert Wilkinson  
15   from the IEC.  I call the question.

16           CHAIR BELL:  There's a motion on the floor  
17   to call the question.  Is there a second?  I hear a  
18   second.  I do want to point out I see no one at the  
19   microphone.

20           All those in favor of calling the question,  
21   please raise your hand.  Thank you.  All those  
22   opposed.  Motion carries.  We'll move directly to the  
23   motion on the floor, which is to accept Comment 9-26.  
24   All those in favor of the motion, please raise your  
25   hand.  All those opposed.  Motion fails.  We'll move

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 210

1 to Motion Sequence 70-13. Microphone 5.

2 MR. MANCHE: Alan Manche speaking for  
3 Schneider Electric. And also I want to make sure  
4 that I am not representing NEMA or the Technical  
5 Committee representation that I represent NEMA on on  
6 this particular subject.

7 CHAIR BELL: Okay. Do you have a motion?

8 MR. MANCHE: I would like to move to return  
9 a portion of the report in the form of Proposal 10-82  
10 and related comments 10-35 through 10-44.

11 CHAIR BELL: Okay. The motion on floor is  
12 to return a portion of the report in the form of  
13 Proposal 10-82 and related comments 10-35 through  
14 10-44. Is there a second? I hear a second. Please  
15 proceed.

16 MR. MANCHE: The intent of this proposal is  
17 seeking to enhance worker safety by requiring  
18 additional technologies installed as part of the  
19 system installation. That's what we're talking about  
20 here. But it also points directly at an  
21 instantaneous trip function within a circuit breaker.

22 The problem is that the submitter -- I  
23 acknowledge the submitter's intent in trying to drive  
24 safety. Unfortunately, we missed the mark here. And  
25 let me see if I can explain why.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 211

1           The new language in this section establishes  
2 no performance requirements. So it establishes that  
3 I have to install additional electrical equipment on  
4 the system, but it doesn't have to perform or provide  
5 any additional safety.

6           For instance, I can have a circuit breaker,  
7 a non-instantaneous trip function on it. I can turn  
8 it to a non-delay function, which means it's going to  
9 protect as good as it's going to protect. The code  
10 requires me to put additional safety pieces on it,  
11 which it's already set there. So we have enhanced  
12 safety in no way by requiring this. And we've only  
13 cost the installer money that he could have put  
14 towards safety in another part of the system.

15           Also, I would suggest that if you take that  
16 example, the Technical Committee also made a  
17 statement that the use of a energy reduction  
18 maintenance switch, as well as other methods, will  
19 reduce the clearing time. I think I have just given  
20 you an example that that Technical Committee  
21 statement is completely inaccurate.

22           There are a number of comments submitted to  
23 the Technical Committee in the fact that the systems  
24 could be de-energized by performing maintenance. And  
25 the Technical Committee appears to have recognized

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 212

1 that. They said, Look, OSHA and NFPA detailed that  
2 there are cases when energized work can be performed.  
3 Well, where that can be performed, maybe there's an  
4 enhancement opportunity. But, unfortunately, we're  
5 requiring it everywhere. Even where I do the  
6 de-energized work, I'm still required to put this  
7 additional equipment or these additional systems in  
8 place to provide protection, which will provide no  
9 additional protection.

10 So I simply ask for your support in this  
11 NITMAM so we can use your resources for electrical  
12 systems safety appropriately across this system.  
13 This is a systems design issue. We can't mandate  
14 safety through a requirement such as this. Thank  
15 you.

16 CHAIR BELL: Thank you. Mr. Carpenter.

17 MR. CARPENTER: Yes. I'd like to defer to  
18 the Chair of Panel 19, Donnie Cook.

19 MR. COOK: My name is Donnie Cook. And I am  
20 the Chair of NEC CMP 10. And I speak in opposition  
21 to Motion 70-13. During the 2011 NEC cycle, CMP-10  
22 collectively expressed support for enhancement of  
23 worker safety. The Committee accepted Proposal 10-82  
24 by a 9 to 3 margin and comments 10-41 and 10-43 by a  
25 9 to 3 margin. The Committee understands and

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 213

1 supports the preferred practice to de-energize  
2 electrical equipment prior to working in that  
3 equipment. The Committee realized that conditions  
4 exist where tasks must be undertaken while the  
5 equipment is de-energized.

6           The Committee dedicated a significant amount  
7 of time during the ROP and the ROC meetings examining  
8 and discussing every item submitted for this subject.  
9 Since the completion of the NEC ROC meeting, I am not  
10 aware of any new or revised information that has  
11 surfaced on this issue. Like many new concepts, we  
12 expect adjustments to the specific text as the text  
13 is used in the next code cycle.

14           When these proposals are submitted, I have  
15 confidence that CMP-10 will give due consideration to  
16 those proposals, and a consensus position will be  
17 achieved in those proposals.

18           CHAIR BELL: Thank you. Further discussion?  
19 Microphone 3.

20           MR. DANIEL: Thank you, Mr. Chairman. My  
21 name is Mike Daniel. I'm a past chair of the  
22 Healthcare Section. I'm representing the section on  
23 this particular issue. At our Executive Board of  
24 Business Meeting we voted to support the motion on  
25 the floor. The document that's presented for

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 214

1 adoption essentially mandates new requirements for  
2 circuit breakers that do not have an instantaneous  
3 trip mechanism. While the use of the three  
4 protection methodologies listed may be appropriate  
5 under certain circumstances, we do not feel that they  
6 should be mandated as the only potential mechanisms,  
7 thereby restricting or limiting other design and  
8 operational options. Again, I rise in support of the  
9 motion on the floor to return a portion of the  
10 report. Thank you.

11 CHAIR BELL: Thank you. Microphone 4.

12 MR. LIPPERT: My name is Kevin Lippert. I'm  
13 with (indiscernible) Corporation, and I speak against  
14 the motion.

15 As was previously stated, these issues were  
16 debated both at the ROP and the ROC stage. And I  
17 believe it's a practical installation requirement and  
18 it will lead to further electrical safety. Easton is  
19 a large manufacturer of circuit breakers, and we do  
20 support the new requirement.

21 And I would also note that organizations  
22 such as UL, NEMA, and installers didn't support this  
23 at the comment stage. And I would urge you to  
24 support the rejection of this NITMAM. Thank you.

25 CHAIR BELL: Thank you. Microphone 6.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 215

1           MR. SAPARITA: Vince Saparita,  
2 Cooper-Busman, speaking in opposition to the NITMAM.  
3 I sit on both Code Panel 10 and NFPA 70E.

4           The mitigation techniques provided in the  
5 requirement are proven methods to reduce arc flash  
6 incident energy. They are well documented in the  
7 electrical safety literature.

8           In brief, arc flash energy can be reduced by  
9 reducing the arc current or the arching time. The  
10 requirements passed by the Panel will reduce the  
11 arching time. They reduce the incident energy to the  
12 same level as if there were no intentional delay.  
13 These methods improve safety. They will reduce  
14 horrific arc flash burns and deaths. No questions  
15 asked.

16           CHAIR BELL: Thank you. Microphone 4.

17           MR. DOLLARD: Thank you, Mr. Chairman. My  
18 name is Jim Dollard representing the IBEW. I rise in  
19 opposition to the motion on the floor.

20           I am also a member of Code-making Panel 10  
21 as well as the NFPA 70E Committee, which is a  
22 standard for electrical safety in the workplace. And  
23 that is where this idea was born. The original  
24 proposal was my proposal.

25           And the intent of this proposal is to target

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 216

1 the highest amount of energy in any given electrical  
2 system where a circuit breaker is utilized. And  
3 that's a key word. And I'm going to mention that in  
4 just a minute.

5           Where you utilize it, you intentionally set  
6 it up in a design situation with no delay. It's  
7 typically a very large power circuit breaker. And  
8 it's typically service equipment or very close to the  
9 service equipment. The incident energy there, which  
10 is the clearing time times the available  
11 short-circuit current, is off the charts. We can't  
12 tell you how to dress to get in there.

13           But if there's a means to take the  
14 intentional delay back in for that brief period of  
15 time, that snapshot in time while men and woman are  
16 going to work in that equipment, we've got a safer  
17 situation.

18           The gentleman from the Healthcare Section  
19 said they did not believe that the methods listed  
20 were the only ones that could be addressed. I urge  
21 you-all to take a look in your beige book, the  
22 comment page 123 where the language reads, "Where a  
23 circuit breaker is utilized without an instantaneous  
24 trip." That means you're going to intentionally use  
25 it that way. It says, "One of the following or

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 217

1 approved equivalent means shall be provided."

2 Now, these large devices, most of them come  
3 with zone selective interlocking context. You can  
4 use an arc reduction rating switch. It's 2010. This  
5 is common sense. So to say we shouldn't build safety  
6 for the installer maintainer in the NEC is  
7 diametrically opposed to the scope of the document.  
8 We maintain safety in the NEC through the use of  
9 marking requirements and many, many other areas.  
10 This affects a very, very small amount of circuit  
11 breakers, but it represents a huge increase in  
12 safety. Thank you, Mr. Chairman.

13 CHAIR BELL: Thank you. Microphone 7.

14 MR. WILKINSON: Mr. Chairman, Robert  
15 Wilkinson, IEC. Call the question.

16 CHAIR BELL: There's a motion on the floor  
17 to call the question. Is there a second. There's a  
18 second. All those in favor of calling the question,  
19 please raise your hand. Thank you. All those  
20 opposed. Motion carries.

21 We'll move directly to the vote on the  
22 motion to the floor, which is to return a portion of  
23 the report in the form of Proposal 10-82 and related  
24 Comments 10-35 through 10-44. All those in favor of  
25 the motion, please raise your hand. Thank you. All

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 218

1 those opposed. Motion fails.

2 We'll move on to Motion Sequence 70-14. Is  
3 there a motion on the floor related to Motion  
4 Sequence Number 70-14? Microphone 7.

5 MR. LARSEN: Good afternoon, Mr. Chairman.  
6 Ed Larsen with Schneider Electric, and I move that we  
7 reject Comment 10-7.

8 CHAIR BELL: Okay. The motion on the floor  
9 is to reject Comment 10-7. Is there a second? I  
10 hear a second. Please proceed.

11 MR. LARSEN: Thank you. Comment 10-7  
12 regards the addition of a fine-print note to 240.4  
13 that makes reference to the ICEA P32-3 to conductor  
14 protection tables. I believe that this fine-print  
15 note is inadequate to address the issue of conductor  
16 protection and indeed may mislead in the proper  
17 protection of conductors.

18 For example, there is no reference made to  
19 the fact that some overcurrent protective devices are  
20 actually tested with wire to ensure that they  
21 adequately protect wire under short-circuit  
22 conditions. Meaning that the use of the formulas in  
23 the ICEA standard are unnecessary. And certainly we  
24 would prefer to have the results of actual test data  
25 versus theoretical calculations.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 219

1           Adequate conductor protection is a very  
2 complex issue. For example, the IEEE buff book  
3 dedicates an entire 52-page chapter to the subject of  
4 conductor protection. And adding one sentence to the  
5 code to try to address this issue is totally  
6 inadequate.

7           I'd like to bring the membership's attention  
8 to an explanation of a negative vote by one of the  
9 Panel 10 members, which states, quote, CMP-10 is  
10 retracing the exact same tracks taken during the 1987  
11 and 1993 NEC cycle. A review of a few of the points  
12 considered during those cycles will establish why  
13 these tables should not have been accepted with  
14 exactly no substantiation before CMP-10 2009.

15           Number one, CMP-10 panel statement from  
16 Proposal 10-13 in the 1992 TCR with reference to the  
17 ICEA document states, quote, The assumption clearly  
18 stated in the documents limit the range of  
19 applicability of the documents to attempt to use them  
20 for all of the protective situations encountered in  
21 the code would be a misapplication of the documents,  
22 end of quote.

23           Number two, the same discussion also took  
24 place in CMP 5 and 6. NEMA's Comment 5-103 in the  
25 1992 ICEA addressing the use of the ICEA table

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 220

1 states, quote, In the 1987 code cycle, the ICEA  
2 indicated this publication is not suitable for code  
3 reference, end of quote.

4 NEMA was not alone with regard to  
5 referencing this issue. So this is an old argument  
6 that goes back many, many years. I suggest to you  
7 that this one sentence is totally inadequate and may  
8 indeed do more harm than good. How? Well, by  
9 perpetuating the myth that circuit breakers cannot  
10 adequately protect wire under short-circuit  
11 conditions when the UL 49 standard requires circuit  
12 breakers to be tested with a length of wire to prove  
13 that they can adequately protect the wiring under  
14 short-circuit conditions. And, second of all, by  
15 misleading engineers into thinking that they must  
16 reduce fault current to ridiculously low levels in  
17 order to satisfy the requirements of the ICEA  
18 formula.

19 Now, just in case you think that I'm making  
20 up that crazy presumption, I can show you here a copy  
21 of an internet thread that I found just a few weeks  
22 ago where an engineer writes on the internet. And he  
23 says, "I've got a problem. I've got a 480-volt 32K  
24 available system. I've got to run a 20-amp circuit.  
25 I want to use 12-gauge wire. I used the ICEA table.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 221

1 And it says I've got to reduce my fault current to  
2 3K. What do I do?"

3 And several engineers wrote in to help him  
4 in reducing the fault current or suggesting that he  
5 use a cable limiter when the simple answer to the  
6 question would have been, "Use a 30K rated circuit  
7 breaker. It's been tested to protect the wire."

8 So I would urge that you reject this  
9 comment. Thank you.

10 CHAIR BELL: Thank you. Mr. Carpenter.

11 MR. CARPENTER: Yes. I would defer to  
12 Donald Cook, chair of Panel 10, at microphone 4.

13 MR. COOK: My name is Donnie Cook. I'm the  
14 Chair of NEC CMP 10, and I speak in opposition to  
15 Motion 70-14.

16 During the 2011 NEC, the Committee rejected  
17 proposal 10-13 by a 10 to 2 margin. During the ROC  
18 meeting, proponents for the addition of this  
19 fine-print note, informational note, were able to  
20 persuade 9 of the 12 committee members to support the  
21 acceptance of Comment 10-7.

22 Accuracy of the ICEA information was not  
23 challenged during the panel discussion. Application  
24 and need for the informational note was questioned,  
25 but the panel discussion resulted in the 9 to 3

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 222

1 margin in the panel ballot. Based on that panel  
2 voting, I speak in opposition to the motion.

3 CHAIR BELL: Thank you. Further discussion?  
4 Microphone 6.

5 MR. OAKLEY: Good afternoon. My name is  
6 George Oakley, Cooper-Busman, and I speak against the  
7 motion. I request your vote to defeat this motion  
8 and support the Committee action. Following are the  
9 reasons why this motion should be defeated.

10 Number one, the fine-print note or  
11 informational note that is to be called in the 2011  
12 Code will alert the code user that short-circuit  
13 occurrence should be considered when selecting  
14 overcurrent protective devices.

15 Number two, the definition of "overcurrent"  
16 in Article 100 specifically identifies that  
17 overcurrents are both overload and short-circuit  
18 currents.

19 Number three, the fine-print note  
20 referencing ICEA P32-382 deals with wire and cable  
21 withstand ratings. This is not a standards issue.  
22 It's an issue of physics. The ICEA tables are a  
23 compilation of heat transfer formulas and thermal  
24 dynamics.

25 Number four, while the NEC does a reasonably

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 223

1 adequate job addressing overload requirements on  
2 conductors as noted in Article 310, the Code is  
3 somewhat lacking in information on short-circuit  
4 protection requirements for conductors.

5           Now, if we look at the NEC handbook on the  
6 2008 edition, I refer to Section 1 ten to the 7,  
7 wiring integrity. The third paragraph of the comment  
8 in the handbook is as follows:

9           "Insulation integrity must be maintained  
10 during overcurrent conditions. Overcurrent  
11 protective devices must be selected and coordinated  
12 using tables of insulation thermal withstand ability  
13 to ensure the damage point of an insulated conductor  
14 is never reached. These tables entitled 'allowable  
15 short-circuit currents for copper or aluminum  
16 conductors' are contained in the Insulated Cable  
17 Engineers Association publication ICEA P32382. See  
18 110-10 for additional information."

19           There was a reference to the IEEE standard  
20 which also references this, and I believe a gentleman  
21 said 60 pages. I would hardly recommend that he pick  
22 up a copy of Eustes Soares' book available through  
23 the IAEI, where in 5 pages it deals with the concept  
24 of the withstandability of conductors under  
25 short-circuit conditions. It's very straightforward,

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 224

1 and I want those in attendance to recognize that this  
2 is not a standards issue. It's an issue of  
3 protection. And when people bring in the standards  
4 issues, it reminds me of the quote from Shakespeare's  
5 Taming of the Shrew where Petrucio says, "She  
6 protests too loudly."

7 So in conclusion I respectfully request your  
8 vote to support the Committee action and to vote  
9 against this motion.

10 CHAIR BELL: Thank you. Microphone 7.

11 MR. MERCERE: Dave Mercere with Southware  
12 Company. I support the motion. The ICEA  
13 short-circuit values are very conservative, and they  
14 are especially conservative for branch circuit wiring  
15 sizes. The listing is already taking into account  
16 the listing of overcurrent device, larger insulations  
17 being designed by engineers are already taking into  
18 account short-circuit ratings. I believe this adds  
19 no clarity and only confusion to installers.

20 CHAIR BELL: Thank you. Microphone 5.

21 MR. MCKLOWSKI: Vince McKlowski, speaking  
22 for the motion. Mr. Chairman, NEMA does support this  
23 motion. Thank you.

24 CHAIR BELL: Thank you. Microphone 7.

25 MR. LIPPERT: Kevin Lippert, I speak

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 225

1 in favor of the motion. And I would just like to say  
2 if you can look back through the ROP and the ROC,  
3 there was absolutely no substantiation presented to  
4 say that the tables of Section 310 are inadequate,  
5 and I think that says it all. Thank you.

6 CHAIR BELL: Thank you. Microphone 4.

7 MR. DOLLARD: Thank you, Mr. Chairman. My  
8 name is Jim Dollard representing the International  
9 Brotherhood of Electrical Workers. And I am a member  
10 of Code-making Panel 10.

11 I had the pleasure and the privilege of  
12 chairing Code-making Panel 10 for three cycles  
13 previous to this one. This particular issue is not  
14 new to Panel 10. And I do not believe that a lack of  
15 substantiation would be an argument that we can use  
16 here.

17 Last cycle we added a new 240.92(B) in Part  
18 8 for supervised industrial installations, which is  
19 the ICEA tables. And I think everyone needs to take  
20 a step back and say what is Article 240 all about?  
21 It's about overcurrent protection. And in Article  
22 240 and 240-21 we outline basically it's location  
23 in-circuit. And we're going to allow you to use a  
24 smaller conductor on a much larger overcurrent  
25 protective device. For example, the 10-foot feeder

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 226

1 tap rule of 10 percent. You can have a 400 amp  
2 overcurrent protective device, take a 40-amp  
3 conductor off of it as long as it terminates in a  
4 40-amp device and it's not over 10 feet long.

5           This fine-print note is information. And to  
6 some degree, I must tell the body that I'm confused.  
7 Most of the dialogue that I've heard infers that this  
8 is mandatory text and that everybody is going to  
9 start using ICEA tables. It's not. It's an  
10 informational note. And informational notes are a  
11 critical part of the National Electrical Code. When  
12 a user has an issue, when they have a problem, they  
13 look to the informational notes for additional  
14 information so they can get it right. I urge you to  
15 oppose the motion on the floor. Thank you,  
16 Mr. Chairman.

17           CHAIR BELL: Thank you. Microphone 7.

18           MR. LARSEN: Ed Larsen, Schneider Electric,  
19 speaking in support of the motion. I want the  
20 membership to be aware of the fact that I am not  
21 opposed to the use of the ICEA tables. What I am  
22 concerned about is the improper use of the ICEA  
23 tables. If overcurrent devices that are being  
24 proposed to be used in the system have not been  
25 tested to prove that they can adequately protect wire

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 227

1 under short-circuit conditions, then certainly the  
2 ICEA tables have been used. I was very careful in my  
3 previous comments to not say anything that would  
4 disparage the formula that is in the ICEA tables.

5           But since a previous commenter raised this,  
6 I will alert the membership to the fact that dating  
7 back to 1980, Dr. Mittendorf from the University of  
8 Cincinnati conducted tests to determine what the  
9 actual short-circuit withstand capability of  
10 conductors is. And those tests revealed that  
11 conductors can withstand anywhere from four to six  
12 times the amount of energy that the ICEA formula  
13 would lead one to believe.

14           And I would suggest that the previous  
15 commenter probably would support the work done by  
16 Mr. Mittendorf because his previous employer has  
17 quoted those papers in papers that they have  
18 presented.

19           So I think we've got well-documented  
20 evidence going back to the 1980s that this  
21 information is -- that the ICEA formulas are very  
22 conservative and, therefore, should be used very  
23 carefully by the engineering community. And I would  
24 once again suggest that this one sentence fine-print  
25 note is totally inadequate to address the issue.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 228

1 Thank you.

2 CHAIR BELL: Thank you. Microphone 8.

3 MR. SAPARITA: Vince Saparita,

4 Cooper-Busman, speaking in opposition to the motion.

5 The ICEA formulas are not new to the NEC. If you've

6 got a code book with you, look at table 240.92(B).

7 Those are the ICEA formulas. They're for use by

8 supervised industrial installations, not for use by

9 everybody in the NEC. And they're for use in

10 determining tap conductors.

11 The fine-print note referenced in the ICEA

12 has no requirements to the NEC. The fine-print note

13 is necessary whenever overcurrent devices are sized

14 several times larger than the ampacity of the

15 conductor, such as when we have taps or such as when

16 we utilize Table 250.122, an equivalent ground

17 conductor.

18 It was mentioned Eustes Soares' book. If

19 you go to IAEEI's book and look at those five pages,

20 they document how Eustes came up with the validity

21 rating. What in the world is a validity rating? The

22 validity rating is that rating on an equivalent

23 grounding conductor and ensures that it stays tight

24 under the lug after a short-circuit occurs. It

25 ensures that that copper doesn't kneel. It ensures

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 229

1 that after the chard occurs and it cools back down,  
2 that we have an adequate equipment grounding path.

3 Yes, the ICEA tables are used for that.

4 In some cases, the overcurrent devices can  
5 be up to ten times the ampacity of the conductor.

6 There are no standard agency tests when the  
7 overcurrent device is ten times the rating of a  
8 conductor. There's nothing wrong with UL 489. UL  
9 489 does a great job. It tests the overcurrent  
10 device with the same size conductor. You might want  
11 to look at the ICEA chart when the overcurrent device  
12 is many times the rating of the conductor.

13 CHAIR BELL: Thank you.

14 THE INTERPRETER: Thank you. Microphone 5.

15 MR. MANCHE: Al Manche, Schneider Electric.  
16 As a member of Code Panel 10 over the last couple of  
17 cycles and watching the introduction of the  
18 information that went into the industrial supervised  
19 installation, I think folks need to understand that  
20 the use of those tables were proposed up in section  
21 general.

22 And what you've got to understand is that  
23 the Committee made a very pointed decision to put  
24 those into an engineered area so that we wouldn't be  
25 misled, misinformation wouldn't be presented, and we

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 230

1 wouldn't get into arguments about how you use an  
2 overcurrent protection device in a general tap rules  
3 application.

4           And that's exactly what this fine-print is  
5 going to do. This fine print is going to -- we  
6 already see misapplications. We see people being  
7 misled by the use of these tables. We have the  
8 gentleman who served in developing the ICEA  
9 information explaining to you that they're not  
10 compatible. They're not to be used as an enforceable  
11 aspect for use with overcurrent protection.

12           So I can't understand why we would support  
13 putting in a fine-print note that would mislead  
14 people in the wrong direction. I ask for your  
15 support.

16           CHAIR BELL: Thank you. Are you speaking  
17 for or against the motion?

18           MR. MANCHE: I'm speaking for the motion.

19           CHAIR BELL: Thank you. Microphone 6.

20           MR. OAKLEY: George Oakley, Cooper-Busman,  
21 speaking against the motion.

22           I'm reminded of the fact that the two most  
23 prevalent elements of the universe are hydrogen and  
24 ignorance.

25           Now, if someone does not understand the

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 231

1 basic laws of engineering and electrical dynamics,  
2 then, yeah, they're going to come up with some really  
3 wild eye-to-eye ideas.

4           The situation is pretty straightforward.  
5 And a previous speaker said that conductor protection  
6 is adequately covered in Article 310. But if one  
7 looks at 310-1, which is the scope, and I quote,  
8 "This article covers general requirements for  
9 conductors, their type designations, installation,  
10 markings, mechanical strengths, ampacity ratings and  
11 uses." This is all overload data. It does not give  
12 into the situation of short-circuit currents.

13           And as pointed out earlier, where a  
14 protective device is tested with the rated conductor,  
15 everything is just really hunky-dory. But there are  
16 situations in the Code where a protective device is  
17 used. And the rated conductor is a minuscule of the  
18 rating of the overcurrent protective device.

19           One example is if one looks at Table 430.52,  
20 where you're sizing branch circuit overcurrent  
21 protective device, in some cases, if you're using a  
22 magnetic-only breaker, you can have a setting as high  
23 as 1,700 percent of the rating of the branch circuit  
24 conductors.

25           So I strongly urge this body in the interest

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 232

1 of safety to allow this fine-print note to go into  
2 240.4. It alerts those that there are other  
3 conditions to be considered in overcurrent protection  
4 than overload. Again, I support the defeat of this  
5 motion.

6 CHAIR BELL: Thank you. Microphone 9.

7 MR. WEBER: Thank you, Mr. Chairman. Ray  
8 Weber representing myself. I call for the question.

9 CHAIR BELL: Motion on the floor to call the  
10 question. Is there a second?

11 UNIDENTIFIED SPEAKER: Second.

12 CHAIR BELL: All those in favor of calling  
13 the question, please raise your hand. Thank you.  
14 All opposed. Motion carries. And we move directly  
15 to vote on the motion on the floor to reject Comment  
16 10-7. All those in favor of rejecting Comment 10-7,  
17 raise your hand. Thank you. All those opposed.  
18 Motion fails.

19 Okay, ladies and gentlemen. We're going to  
20 take a ten-minute break. We ask that you be back  
21 here at 2:40. Thank you.

22 (Thereupon this portion of the  
23 proceedings were concluded at  
24 2:28 p.m.)

25 \* \* \* \* \*



The following is the continuation of the  
Hearing on NFPA 70, *National  
Electrical Code*<sup>®</sup>

Start time: 2:40 PM

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 1

N.F.P.A  
NATIONAL FIRE PROTECTION ASSOCIATION CONFERENCE

JUNE 10TH, 2010

2:40 PM

\* \* \* \* \*

- P R O P O S A L S   A N D   C O M M E N T S -

HELD AT:   MANDALAY BAY RESORT AND CASINO  
          3950 LAS VEGAS BOULEVARD, SOUTH  
          LAS VEGAS, NEVADA   89119

REPORTED BY:   KIM TUCHMAN, CCR#: 811

**NFPA Meeting - June 10, 2010  
Technical Meeting**

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

M E M B E R S O F T H E B O A R D

\* \* \* \* \*

KERRY BELL - PRESIDING OFFICER

JAMES CARPENTER - CHAIR OF THE NEC, CORRELATING  
COMMITTEE

LINDA FULLER - RECORDING SECRETARY

AMY CRONIN - SECRETARY OF THE STANDARDS COUNCIL

JAMES PAULEY - CHAIR OF THE STANDARDS COUNCIL

MAUREEN BRODOFF - VICE PRESIDENT AND GENERAL COUNSEL OF  
THE NATIONAL FIRE PROTECTION ASSOCIATION

RON FARR - MEMBER OF THE STANDARDS COUNCIL

MARK EARLEY - NATIONAL FIRE PROTECTION ASSOCIATION STAFF

-o0o-

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 3

1 COUNTY OF CLARK, NEVADA, JUNE 10TH, 2010

2 2:40 P.M.

3 \* \* \* \* \*

4

5 MR. BELL: Okay. Let's get started again.

6 Ladies and gentlemen, can I ask you to take your seats?

7 Microphone 5.

8 MR. KENNEDY: Hi. My name is Chad Kennedy  
9 with Schneider Electric and I'm the submitter of 70-15.

10 MR. BELL: And your motion?

11 SPEAKER ON THE FLOOR: To accept Comment  
12 10-47.

13 MR. BELL: Okay. The motion on the floor to  
14 accept -- accept 10-47. Is there a second?

15 UNIDENTIFIED SPEAKER: Second.

16 MR. BELL: We hear a second. Please proceed.

17 MR. KENNEDY: Thank you. This motion would  
18 return the previous edition text thereby deleting the  
19 proposed new 240.91. The 240.91 would allow and  
20 supervise industrial installations for overcurrent  
21 protective devices greater than eight hundred amps to  
22 use a conductor size that's smaller than what  
23 manufacturers designed and tested the equipment for.

24 And it would also be a smaller conductor size  
25 and what the product standards for safety cover, and it

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 4

1 was evaluated for as far the equipment listing. This is  
2 a thermal temperature rise issue where terminals within  
3 equipment are some of those difficult temperatures to  
4 obtain within the product safety standards. And the  
5 conductor size has a great impact on that temperature.  
6 So we expect the temperature rises to be out of  
7 compliances based on this requirement.

8           The -- the other pc areas is that there's no  
9 limit to the number of devices within equipment that  
10 would be able to utilize this role. And many times you  
11 have multiple overcurrent protector devices within the  
12 equipment that can utilize this role, so we move to  
13 support this comment -- to accept Comment 10-47 that  
14 would not allow a smaller conductor size in what the  
15 equipment was designed and tested for.

16           Thank you.

17           MR. BELL: Thank you. Mr. Carpenter.

18           MR. CARPENTER: Yes. I'd like to recognize  
19 Donald Cook of Panel 10; microphone 4.

20           MR. COOK: My name is Donny Cook. I am the  
21 chair of NEC CMP 10, and I speak in opposition to the  
22 Motion 70-15. During the 2011 NEC cycle, CMP 10  
23 accepted Proposal 10-83 by a nine to three margin.

24           The proposal allows a round-up provision for  
25 overcurrent devices rated over 800 amperes in specific

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 5

1 and limited applications. Based on negative votes and  
2 comments to Proposal 10-83, revisions to that initial  
3 text were included in the Comment 10-49. Those  
4 revisions include a listing requirement to assure  
5 equipment used in this application is suitable for this  
6 application.

7           Current listing requirements and equipment  
8 design would not allow the provisions to be -- to be  
9 applied. However, this change in the NEC will allow,  
10 but not require, product standards and equipment to be  
11 revised, redesigned, and reevaluated if the market  
12 exists for this application.

13           The market will determine the need for this  
14 change. CMP 10 by a ten to two margin determine this  
15 provision could be applied safely where the equipment  
16 was evaluated, marked, and used within those listing  
17 limitations.

18           That's it.

19           MR. BELL: Thank you. Further discussion,  
20 microphone 7.

21           MR. LIPPERT: Kevin Lippert, Eaton  
22 Corporation. I speak in support of the motion, and just  
23 to confirm what was said earlier. We know that this  
24 change will result in increased temperature, and there  
25 was no data to confirm that this will not have adverse

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 6

1 effects to the connected equipment.

2           Additionally, as was mentioned, there are no  
3 present listing requirements to cover this.

4           MR. BELL: Thank you. Microphone 5.

5           MR. BACLAWSKI: Vince Baclawski, National  
6 Electrical Manufacturers Association, speaking in  
7 support of the motion.

8           Mr. Chairman, NEMA supports this motion.  
9 Thank you.

10           MR. BELL: Thank you. Microphone 5 again.  
11 Microphone 4.

12           MR. DOLLARD: Thank you. Mr. Chairman, my  
13 name is Jim Dollard representing the International  
14 Brotherhood of Electrical Workers. I rise in opposition  
15 to the motion on the floor.

16           As a member of Code Making Panel and Panel 10  
17 and chair for three cycles before that, we have kicked  
18 this issue around a lot, and the previous speaker did  
19 say that there would be increased temperature.

20           There's no doubt about that. We know that.  
21 That's why there's language in this new section that  
22 says, "Where all equipment in which the conductors  
23 terminate is listed and marked for the application."

24           There may not be equipment listed and marked  
25 for the application today, but it's not unusual for us

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 7

1 to include a requirement like that in the National  
2 Electrical Code because on some days, product standards  
3 drive the NEC, and on others the NEC drives product  
4 standards.

5           This is going to allow the manufacturer to  
6 take -- if they chose to -- to list and mark equipment  
7 in this manner, and it's going to help the supervised  
8 industrial installations, the big industrials, compete  
9 internationally.

10           You have to keep in mind that this is in part  
11 8 (phonetic) "Supervised Industrial Installations." So  
12 it is extremely limited in scope. I urge you to defeat  
13 the motion on the floor. Thank you, Mr. Chairman.

14           MR. BELL: Thank you. Microphone 5.

15           MR. MANCHE: Allen Manche; Schneider Electric,  
16 speaking in support of the motion. I think the issue  
17 here is we put a listing requirement in the code to  
18 permit something that we have no fact-finding  
19 requirement about.

20           We don't even know if it can be listed. We  
21 don't even know if a product standard could even be  
22 developed that would permit this, and we -- and then to  
23 Jim's point, let's take it a step farther. We have seen  
24 this happen in previous codes. We -- we saw a listing  
25 requirement in Article 250 that required the listing of

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 8

1 a ground-fault device so that you could reduce the size  
2 of the grounding conductor.

3           We put a listing requirement on that and guess  
4 what? Two cycles later we came back -- we came -- we  
5 brought it back out because we had the cart before the  
6 horse, and that's the same thing that we're doing here.  
7 So I guess I sit here and plead to you why would we  
8 gamble on placing permission in the NEC when we really  
9 don't know if it can be done at all. I ask for your  
10 support.

11           MR. BELL: Thank you. Microphone 7.

12           MR. WILKERSON: Mr. Chairman. Tom Wilkerson;  
13 IEC. Call for the question.

14           MR. BELL: Motion on the floor to call the  
15 question. Is there a second?

16           UNIDENTIFIED SPEAKER: Second.

17           MR. BELL: I hear a second. All those in  
18 favor of calling the question, please raise your hand.

19           Thank you.

20           All those opposed?

21           Motion carries.

22           We'll move directly to the vote which is to  
23 accept Comment 10-47.

24           All those in favor of the motion, please raise  
25 your hand.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 9

1 Thank you.

2 All opposed?

3 Motion fails.

4 We'll move on to Motion Sequence Number 70-16.

5 Microphone 5.

6 MS. TENNANT: Thank you. I'm Lori Tennant  
7 with Schneider Electric. I am one of the submitters on  
8 certified amending Motion 70-16.

9 Mr. Chairman, I would like to make the motion  
10 to return a portion of a report in the form of a  
11 proposal, 11-107a and related Comment 11-43a, 11-44,  
12 11-45, 11-46, and 11-47.

13 MR. BELL: You said that very well. I'm not  
14 going to repeat it. Is there a second?

15 MS. TENNANT: Thank you.

16 UNIDENTIFIED SPEAKER: Second.

17 MR. BELL: Please proceed.

18 MS. TENNANT: Thank you. Part 10 of Article  
19 430 addresses the overcurrent protection that drives in  
20 conductors. Simply, if a new language of 430.123 is  
21 included in the code, it will allow larger overcurrent  
22 protectors devices than those the drawing is tested and  
23 evaluated for.

24 Also, if included, the code would be in  
25 conflict with the product standards -- per drives. So I

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 10

1 am requesting that my motion be supported.

2 Thank you.

3 MR. BELL: Thank you. Mr. Carpenter.

4 MR. CARPENTER: I'd like to defer to chairman  
5 of Panel 11, Wayne Brinkmeyer.

6 MR. BRINKMEYER: Thank you, Mr. Chairman.  
7 Wayne Brinkmeyer, Chair of Code Making Panel, Panel 11,  
8 and I speak in support of the committee action.

9 Two proposals: 11-108 and 11-110 were  
10 submitted and CMP 11 recommending language to be added  
11 to wit: "Address Branch Short-Circuit and Ground Fault  
12 Protection requirements for adjustable speed drives,"  
13 thereby, creating a new section 431.3.

14 A CMP 11 incorporating intent of the  
15 recommendations of both proposals by creating panel  
16 proposal 11-107A. CMP 11 concluded that the panel  
17 proposal was the best way to capture the recommendation  
18 of both proposals which address -- address the same  
19 subject.

20 It's actually recorded in the ballot on  
21 Proposal 11-107A was fifteen to zero in the affirmative.  
22 During the ROC meeting, CMP 11 developed Panel 11-43A in  
23 an effort to modify the language accepted by Panel  
24 Proposal 11-107a to incorporate -- incorporate the  
25 recommended changes accepted in the actions in the

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 11

1 actions on Comments 11-44, 45, 46, and 47.

2 CMP also included additional revisions for  
3 clarity. The action recorded in the ballot on Comment  
4 43a was fifteen to zero unanimously affirmative.

5 Thank you.

6 MR. BELL: Thank you. Further discussion.  
7 Microphone 5.

8 MR. KOVACIK: Thank you, Mr. Chair. I am John  
9 Kovacik; Underwriters Laboratories, and I'm speaking as  
10 the representative for the Electrical Section of the  
11 National Fire Protection Association, and I speak in  
12 support of the motion.

13 The Electrical Section met earlier this week  
14 and at that meeting the members of the Section voted to  
15 support the motion on the floor.

16 Thank you.

17 MR. BELL: Thank you. Microphone 9.

18 MR. TAMBLINGSON: Good afternoon, Mr.  
19 Chairman. I am Jay Tamblingson with Rockwell  
20 Automation. I'm speaking in support of the motion.

21 I'm also one of the submitters of one of the  
22 original proposals that 11-107a was based on as well as  
23 one of the Comments. This new section 431-23 is  
24 intended to clarify the requirements for the selection  
25 of ground short-circuit and ground fault protection for

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 12

1 adjustable speed drives.

2           However, review of the final language has  
3 revealed some unintended consequences. The primary  
4 issue is that the provisions in the second sentence  
5 reference size of protection based on the input current  
6 to the drive.

7           Further review after the ROC has shown that  
8 this is inconsistent with the listing requirements for  
9 drives as the current ratings of protective devices for  
10 testing are based on the output current of the drives as  
11 it is common for drives to have fire input currents than  
12 output currents.

13           Sizing protection based on this higher input  
14 current could result in selection of a fuse or circuit  
15 breaker exceeding that for which a drive was tested.  
16 This clearly was not intended.

17           This issue was meant -- was missed during the  
18 ROC process and any specific language to address it was  
19 not included in live or any ROC comments submitted to  
20 the panel. As such, I'm asking the membership vote in  
21 favor of the motion to return the section.

22           Thank you.

23           MR. BELL: Thank you. Microphone 5.

24           MR. SAPARENA: Vince Saparena (phonetic);  
25 Cooper Bussmann speaking in favor of the motion. I sit

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 13

1 on Code Panel 11.

2 Basically, we didn't look at this aspect of  
3 the requirements that we voted into place. If we had  
4 looked at this aspect of it, we wouldn't have passed.

5 In reality, what this would do is it would  
6 allow people to apply drives with overcurrent devices  
7 larger than those with which the devices had been  
8 tested, and that's something we don't want to do from a  
9 safety standpoint.

10 So I urge you to support this.

11 MR. BELL: Thank you. Microphone 1.

12 MR. ODIE: Mike Odie, Underwriters  
13 Laboratories, in support of the motion.

14 I think if you go back and look at the -- the  
15 new part 10, we reorganized that a couple code cycles  
16 ago and moved all of the -- of the adjustable speed  
17 drive information back to part 10.

18 The -- the opening 431-20 says, in general,  
19 "The installation provisions of Part 1 through Part 9 of  
20 Article 430 apply unless modified or supplemented by the  
21 information in -- in this Part 10."

22 The issue here is that if I go back to 430-52  
23 (C)(1), exception number 2, that gives us the largest  
24 size overcurrent protective device. If I can't get the  
25 motor to start using a -- a smaller level of protection

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 14

1 than I can go to a maximum value, and -- and what this  
2 is going to do is it's going to say, "Okay. If -- if I  
3 -- I can even go in excess of what that maximum value  
4 overcurrent protection would be. And -- and I think  
5 that's a wrong -- it's a very wrong move.

6 I think that that should be -- be either  
7 withheld or -- or -- or -- or again taken out of the --  
8 the 2011 Code brought back in 2014 and they should take  
9 a look at this again.

10 When we go back in UL 508(A), for example, and  
11 UL 508 when we're dealing for industrial control and --  
12 and these kinds of -- of motors, oftentimes, you know,  
13 if I'm going to put a lower size overcurrent protected  
14 device, then I'm going to put that on the main plate  
15 of -- of the adjustable speed drive.

16 If not, then I'm going to -- to utilize the  
17 National Electrical Code, and, again, that's very  
18 prescriptive in what we're going to do based on  
19 430-52(C)(2) with a maximum size overcurrent protected  
20 device is what's permitted by the UL Standards.

21 So I think that this is -- we should support  
22 this motion to -- to -- to -- to leave 431-23.

23 MR. BELL: Thank you. Microphone 5.

24 MR. KOVACIK: Thank you, Mr. Chair. John  
25 Kovacik, Underwriters Laboratories, speaking as an

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 15

1 employee of UL, speaking in support of the motion.

2 I had a meeting with the technical experts of  
3 UL who are responsible for variable frequency drives  
4 which are the products affected by the actions of the  
5 Panels, and we concluded that while the original  
6 intentions of the Panel were good, that the ultimate  
7 result was fraught with flaws and was not good code,  
8 and, therefore, we felt that it would be better to  
9 return to the material in the current code, the 2008  
10 Edition, and we urge the members of this body to support  
11 the motion on the floor.

12 Thank you.

13 MR. BELL: Thank you. Microphone 7.

14 MR. LARSEN: Ed Larsen; Schneider Electric  
15 speaking in favor of the motion.

16 I, too, am a member of Panel 11. Speaking for  
17 myself, I think it's unfortunate that the information  
18 that has been presented by -- in these motions was not  
19 made available to the Panel and I suggest that if we had  
20 that information, we might have had a different result,  
21 so I urge you to support the motion.

22 MR. BELL: Thank you. Microphone 4.

23 MR. WILKERSON: Robert Wilkerson, IEC, call  
24 the question.

25 UNIDENTIFIED SPEAKER: Second.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 16

1           MR. BELL: Motion on the floor to call the  
2 question. I hear a second. All is in favor of calling  
3 the question, please raise your hand.

4           Thank you.

5           All those opposed.

6           Motion carries.

7           We'll move directly to the vote.

8           The motion on the floor which is to return a  
9 portion of the report in the form of a proposal 11-107a  
10 and related Comments 11-43a, 11-44, 11-45, 11-46, and  
11 11-47.

12           All those in favor of the motion, please raise  
13 your hand.

14           Thank you.

15           All those opposed.

16           Motion carries.

17           Okay. We'll move on to Motion Sequence Number  
18 70-17. Is there a motion on the floor related to Motion  
19 Sequence 70-17? Microphone 5.

20           MR. CARON: Yes. I'm Dan Caron, a principal  
21 at B.R. plus Athanas as consulting engineer from Boston,  
22 Massachusetts. I'm a registered professional engineer,  
23 and I'm also a member of Code Making Panel 13. I make a  
24 motion to accept Comment 13-96 as modified by the Panel.

25           MR. BELL: The motion on the floor is to

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 17

1 accept Comment 13-96 as modified by the Panel. Is there  
2 a second?

3 UNIDENTIFIED SPEAKER: Second.

4 MR. BELL: Please proceed.

5 MR. CARON: Article 695.4, Continuity of Code,  
6 was substantially revised by Proposal 13-77a; submitted  
7 by CMP 13 during the ROP due to many proposals presented  
8 to clarify the language and better align the section  
9 with NFPA Section Chapter 9.

10 Comment 13-96 was submitted to correct an  
11 inconsistency between NFPA 20 and the revised version of  
12 695.4. The comment was accepted in principle by CMP 13  
13 following a revision by a task group of members of the  
14 committee.

15 The final version of the comment was accepted  
16 by the committee seventeen to one. Subsequently, the  
17 Technical Correlating Committee directed that the  
18 Comment 13-96 be recorded as quote, "reject" as  
19 extracted material from NFPA 20 and is under the purview  
20 of the NFPA 20 Technical Committee.

21 I respectfully disagree with the position of  
22 the TCC. The extract material reference comes from NFPA  
23 20, Chapter 9.2, paragraphs 3.1. The -- text of this  
24 section states certain requirements for a fire pump  
25 disconnecting means, and, specifically, refers to the

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 18

1 normal source of power.

2 In fact, Chapter 9.2 is entitled to normal  
3 power and all references specifically refer to the  
4 normal source of power.

5 Both 695.4(B)(3) and NFPA 20 923-1 require the  
6 disconnecting means for a fire pump to comply with the  
7 following: They should be identified as being suitable  
8 for use of service equipment. They should be locked low  
9 in the closed position. They shall be located remote  
10 from other building disconnecting means, and they shall  
11 be located remote from other fire pumps to its  
12 disconnecting means.

13 Again, Chapter 20, 9.2, normal power states,  
14 quote, where the disconnecting means provided --  
15 permitted by 9.2.3 is installed, the disconnecting means  
16 shall meet all of the following."

17 695.4(B)(3) states, "All disconnecting means  
18 that a unique fire pump loads shall comply with items A  
19 through D."

20 If this is extract material than it lost  
21 something in the translation. The language in the  
22 rewritten section of 695 is not verbatim extract  
23 material. The meaning has been completely changed by  
24 adding the term, "All."

25 NFPA 20 does not require all fire pump

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 19

1     disconnecting means to meet the standard requirements.  
2     Just these devices -- provided on the normal source of  
3     power in certain circumstances.

4             As 695.4(B)(3) is currently written, the term,  
5     "All" could correctly be interpreted to include the  
6     disconnecting means that originate from an alternate  
7     source of power.

8             However, if the alternate source of power is  
9     an Onsite Standby Generator, NFPA 20, Chapter 9.3,  
10    Alternate Power, and Chapter 9.6 Onsite Standby  
11    Generator Systems are silent on the issue and there is  
12    no other extract materials in 695 clarifying this  
13    requirement, requiring the alternate source  
14    disconnecting means to comply with the stated items is  
15    in direct conflict with other sections of NFPA 20 and  
16    695 where they state, quote, a tap to the head of the  
17    disconnect -- generator disconnecting means shall not be  
18    required, unquote.

19            If the breaker from the generator is not  
20    tapped then it would not be possible to have the  
21    breakers suitable for use of service equipment among  
22    other inconsistencies.

23            Comment 13-96 clarifies it. "The  
24    disconnecting means required to meet the stated  
25    requirements is the disconnecting means on the normal

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 20

1 source of power as NFPA requires."

2           In addition, the comment clarifies that the  
3 disconnecting means on the alternate source of power, if  
4 the alternate source of power is a generator, must  
5 comply with 700.9(B)(5).

6           This revised language is necessary to maintain  
7 the intent of NFPA 20, Chapter 9.2. Again, a majority  
8 of the members of Panel 13 agreed with the intent of the  
9 original comment and seventeen of the eighteen members  
10 of the Panel voted in favor of accepting principle.

11           In conclusion, this additional language does  
12 not change extract material from Chapter -- NFPA 20,  
13 Chapter 9. It reinforces the material and makes the two  
14 documents more consistent.

15           The motion I'm making on the floor today  
16 should be accepted and the comments should be considered  
17 for acceptance by the Technical -- Technical Committee  
18 and the TCC. I urge this body to support this motion.  
19 Thank you.

20           MR. BELL: Thank you. Mr. Carpenter.

21           MR. CARPENTER: Yes. Thank you. I would like  
22 to -- to defer to Jack -- Mr. Kovacik, member of the TCC  
23 for his, and then I will call on Don Bliss, the chairman  
24 of Panel 13, for his comments.

25           MR. BELL: Microphone 2.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 21

1           MR. KOVACIK: Thank you, Mr. Chair. Jack  
2 Kovacik, Underwriters Laboratories, speaking as a member  
3 of the NEC Technical Correlating Committee, and speaking  
4 against the motion.

5           When the TCC looked at the panel action in its  
6 review of the ROC meeting for Panel 13, we considered  
7 what the panel had done strictly from a procedural  
8 prospective. We had no issue with the technical aspects  
9 of what the Panel had done; however, we felt that the  
10 Panel had acted on material that was clearly identified  
11 as being extracted out of the NFPA 20 document for  
12 stationary fire pumps, and we felt that the material has  
13 always been considered to be extracted, and the material  
14 I'm referring to is in Section 695 dot 4, the NEC.

15           It is currently identified as extract  
16 material, and we felt from a procedural issue the Panel  
17 had erred. We felt that it was an oversight on their  
18 part that had to be corrected.

19           I'd also like to point out that the Panel had  
20 looked at other comments in the ROC meeting that had  
21 taken similar actions to not act on them recognizing  
22 that they were part of material extract and -- from NFPA  
23 20.

24           I'd like to also point out that the extract  
25 policy does not require that the language extracted out

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 22

1 of the base document be verbatim. The only requirement  
2 is that the intent be the same.

3           While I recognize that if you compared the two  
4 documents one could argue that perhaps there are some  
5 differences; however, the arguments are loaded with  
6 subjectivity so the decision of the TCC was that it's  
7 extract material. It should be first acted upon by the  
8 20 Committee and that the material was inadvertently  
9 acted on by the Panel.

10           Thank you.

11           MR. CARPENTER: Thank you. Now, I'd like to  
12 call on Don Bliss, Chairman of Panel 11 -- 13.

13           MR. BLISS: Thank you, Mr. Chairman. My name  
14 is Donald Bliss. I chair Panel 13. I represent the  
15 National Infrastructure Institute of Durham (phonetic),  
16 New Hampshire.

17           I'm speaking on behalf of Panel 13 and in  
18 support of the motion and our original action.

19           During our deliberations, the Panel was very  
20 sensitive to the purview of NFPA 20 Technical Committee,  
21 and we believe that our actions separated the alternate  
22 standby generator source disconnect from the  
23 requirements for the normal disconnect in order to  
24 correlate with NFPA 20, Section 9.2.

25           The Panel respectfully believes that its

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 23

1 action does not fall into the purview of NFPA 20, and,  
2 in fact, that we have made the two documents more  
3 consistent with one another, although, I will agree with  
4 Mr. Kovacik that it is a subjective matter, and we urge  
5 you to support our original action.

6 Thank you.

7 MR. BELL: Thank you. Microphone 5. No?  
8 Microphone 7.

9 MR. WILKERSON: Robert Wilkerson. IEC, call  
10 for the question.

11 MR. BELL: Is there a second?

12 UNIDENTIFIED SPEAKER: Second.

13 MR. BELL: I hear a second. All those in  
14 favor of calling the question, please raise your hand.

15 Thank you.

16 All those opposed.

17 The motion carries.

18 We'll move directly to the vote which is to  
19 accept Comment 13-96 as modified by the Panel.

20 All those in favor of this motion, please  
21 raise your hand.

22 Thank you.

23 All those opposed.

24 Motion carries.

25 UNIDENTIFIED SPEAKER: One moment, Mr.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 24

1 Chairman. Could I request a standing count please for  
2 the record?

3 MR. BELL: Oh, I don't -- really wasn't that  
4 close.

5 UNIDENTIFIED SPEAKER: Okay.

6 MR. BELL: We'll move onto Motion Sequence  
7 70-18, and as I understand, the maker of that motion has  
8 decided not to pursue that and has notified NFPA  
9 accordingly, and so we'll move on to Motion Sequence  
10 number 70-19.

11 Is there a motion on the floor related to  
12 70-19?

13 Microphone 1.

14 MR. WECHSLER: Mr. Chairman, I am David  
15 Wechsler. I'm the principle American Chemistry Council  
16 representative on Code Making Panel 14. I'm the  
17 designated speaker for Mr. Michael Wells -- Walls of the  
18 American Chemistry Council.

19 Our motion -- our motion is to accept the  
20 Comment 14-92 which would result in the elimination of  
21 the fine -- the new fine print note dealing with EPL and  
22 if -- with your permission I would also like to extend  
23 and modify this action to Comment 14-93 dealing with the  
24 exact same text, but located in a slightly different  
25 section; if that's permissible?

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 25

1           MR. BELL: Okay. The suggestion here is that  
2 you move this motion that you have that's certified and  
3 if it's successful then we'll give you opportunity to  
4 submit a follow-up motion.

5           MR. WECHSLER: Sure enough. We can do it that  
6 way.

7           MR. BELL: Okay. So the motion on the floor  
8 is to accept Comment 14-93. Is there a second?

9           UNIDENTIFIED SPEAKER: Second.

10          MR. BELL: I hear a second. Please proceed.

11          MR. WECHSLER: Thank you. Again, I am David  
12 Wechsler. I'm the principal American Chemistry Council  
13 representative of Code Making Panel 14. I want to do  
14 some -- get rid of some housekeeping issues which you'll  
15 hear first of all.

16                 This discussion was heard both in the proposal  
17 and the comment stage and it was voted upon in the  
18 affirmative thirteen to one not supporting what I was  
19 speaking to. Okay?

20                 I would also like to refer to some information  
21 that we have in case we want to ever apply the National  
22 Electrical Code Style Manual dealing with the aspect of  
23 fine print notes.

24                 The NEC Style Manual states in Article 3.1.3  
25 that, "Fine print notes contain explanatory

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 26

1 information." In this particular case, there is no  
2 explanatory information because there is nothing in the  
3 Code Making Panel 14 sections dealing with this EPL.  
4 Nor does EPL exist in any other NFPA Standard Code or  
5 documentation. Minor detail.

6           The other aspect is uses of references to  
7 improve the clarity of the rule. Let me explain to you  
8 very quickly what an EPL is because it is rather an  
9 important concept to understand why we're going to  
10 consider removing this because I know many of you think,  
11 after all, why do anything? This is a fine print note.  
12 And fine print notes do not deserve the attention and  
13 work that really goes onto it which is why we got into  
14 this situation in my opinion.

15           In the -- in the hazardous area classification  
16 arena we have two methodologies. One is the division  
17 and one is the zone. In the division methodology, the  
18 equipment markings take on a marking that normally will  
19 be seen for the location. It will be, for example,  
20 "Class 1, Division 1, Group C." Very straightforward.

21           In the zone scheme, we have a different  
22 marking. That marking is the protection technique. So  
23 the equipment is marked with the protection technique.  
24 As an example, a protection technique in the zone might  
25 be a "D" which means "flameproof."

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 27

1           In the division scheme, we know the protection  
2 techniques are explosion proof. You have to understand  
3 what you're doing, of course, as to how to install this,  
4 but there is a difference in the markings.

5           When we go back to the zone methodology, and  
6 we look at how the markings are used in places like  
7 starting off in Europe, like under the ATEX requirement,  
8 they elected to provide a modification to say how you  
9 would use that "D" piece of equipment and they use a  
10 system developed called, "Categories."

11           In the IEC which is another form of the zone  
12 methodology, they elected to go with this concept  
13 called, "E-P-L" which is using small letters. Now, why  
14 is -- what's going on with this?

15           What this means is the fact that if I have a  
16 piece of equipment such as a flameproof piece of  
17 equipment, I have to know where I can utilize it and  
18 there's a concept paper that deals with this whole EPL  
19 concept which says, in effect, that you would conduct,  
20 in addition to the normal hazards classification  
21 assessments, the area of flammable or combustible in  
22 nature normally, abnormally, or, very insignificantly,  
23 of looking at the ignition potential of that equipment.

24           Placed another way, how likely is an  
25 explosion-proof enclosure not going to keep -- not --

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 28

1 not going to work? And what you would do under this  
2 zone EPL concept is apply a methodology that's not  
3 well-defined and you'd run an assessment to determine,  
4 "Do I need a better quality electrical control ignition  
5 than what I may be getting?" So you'd have an A, B, or  
6 C. Okay? Understand what I'm saying?

7 Now, the aspects of this is not only you can  
8 say, "I can use a piece of Zone 1 equipment in Zone 2,"  
9 but the methodology also says, "I can use a Zone 2 piece  
10 of equipment in Zone 0."

11 Who controls this? The users. What's the  
12 criteria? It's not defined yet, but it's coming. Trust  
13 me. It's coming.

14 So what this -- what this fine print note is  
15 going to tell us is the following. It's going to read:  
16 "The EPL or equipment protection level may appear in the  
17 product marking."

18 Now, as you all know, if you've been to any of  
19 the shows around when you look at product markings on  
20 equipment on hazardous locations, you get these big eye  
21 charts.

22 MR. BELL: Ten seconds.

23 MR. WECHSLER: They have all this information  
24 on there. What this says in that, the EPL says that's a  
25 "G" for gas, "D" for dust, "M" for mining. None of

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 29

1    which are addressed in this article in Zone -- Zone 0  
2    which is our 505.

3            It goes on to say that this understanding is  
4    very high -- high or enhanced level protection.  So what  
5    we have is a table in 505 that says, "Use a flameproof  
6    equipment in Zone 1," and we've got this other area that  
7    says, "Hey" --

8            MR. BELL:  Okay.  You got to wrap it up.

9            MR. WECHSLER:  -- "we don't know what's going  
10   on, but you can use it as a moderate high or not.

11           Thank you.

12           MR. BELL:  Thank you.  Mr. Carpenter.

13           MR. CARPENTER:  I'd like to defer to Robert  
14   Jones, the chair of Panel 14 at Mike 4.

15           MR. JONES:  Thank you, Mr. Chairman.  I am  
16   Robert Jones.  I'm chairman of Panel 14.  I speak in  
17   opposition of the motion on behalf of Panel 14.

18           Panel 14 voted unanimously to accept Proposal  
19   14-179.  It produces fine print mode 4 for second  
20   505.9(C)(2).  In the comment stage, Panel 14 voted to  
21   reject the Comment 14-92 of a vote of thirteen to one.

22           I stand with the -- with the Panel; the  
23   majority wants to keep the fine print note.

24           MR. BELL:  Thank you.  Further discussion,  
25   Microphone 8.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 30

1           MR. BACLAWSKI: Vince Baclawski, National  
2   Electrical Manufacturers Association, speaking against  
3   the motion.

4           Mr. Chairman, NEMA opposes this motion.

5           Thank you.

6           MR. BELL: Thank you. Microphone 8 again.

7           MR. LINDSAY: Thank you. Travis Lindsay.  
8   Travis Lindsay Consulting Services. I'd like to call  
9   the question.

10          MR. BELL: I see no one else at the  
11   microphone. Motion is to call the question. Is there a  
12   second?

13          UNIDENTIFIED SPEAKER: Second.

14          MR. BELL: All those in favor of calling the  
15   question, please raise your hand.

16          Thank you.

17          All those opposed.

18          Motion carries.

19          We'll move to the mo -- to the motion which is  
20   to accept Comment 14-92.

21          All those in favor of the motion, please raise  
22   your hand.

23          Thank you.

24          All those opposed.

25          Motion fails.



**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 32

1 and I'm a member of Code Making Panel 15, and I move the  
2 rejection of Comment 15-101 and return to the 2008 text.

3 MR. BELL: Okay. Motion on the floor is to  
4 reject Comment 15-101. Is there a second?

5 UNIDENTIFIED SPEAKER: Second.

6 MR. BELL: I hear a second. Please proceed.

7 MR. LIPSTER: Mr. Chairman, this makes a real  
8 case study of the kind of unintended consequences that  
9 can transpire in a ROC meeting.

10 Back in Redondo Beach at our Code Making Panel  
11 15 meeting, we had a young gentleman from Southwire  
12 making a presentation in support of Comment 15-101.

13 This comment allows the use of MC Cable having  
14 the mechanical characteristics of electrical metallic  
15 tubing in patient care areas.

16 And, as a side, these branch circuits of  
17 patient care areas are, in my opinion, I believe most of  
18 Code Making Panel 15, the most important branch circuits  
19 in any installation at all. Lives are on the line and  
20 for years, they've been required to be metallic pipe.

21 During the course of the young man's  
22 presentation he produced a UL fact-finding report. The  
23 subject of which was a new style MC cable designed to  
24 have the mechanical characteristics of electrical  
25 metallic tubing. This new style cable assembly was a

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 33

1 prototype not manufactured or available for general use.

2           The date of the report that was passed out to  
3 everyone was December 3rd, 2009, which was very  
4 interesting considering the Code Making Panel meeting  
5 began on December 7th, 2009; only two working days after  
6 the release of the UL fact-finding report.

7           I distinctly remember during the course of the  
8 meeting trying to skim the report and trying to pay  
9 attention to the young man's presentation. We learned  
10 that the prototype cable is substantially larger than  
11 normal MC cable, and the conductor installation was  
12 significantly larger, by that, I mean, thicker, than  
13 that of normal number 12 copper wire.

14           After the presentation, a motion was made and  
15 seconded to accept the comment based on the UL report.  
16 A vote was taken and the motion passed. This brings to  
17 the point some procedural issues that occurred during  
18 this whole scenario.

19           The comment closing period was in the end of  
20 October 2009. The UL report was not published until  
21 December 3rd, 2009. The introduction of this report  
22 violates the rules governing committee projects as  
23 detailed in the published ROC.

24           And, in fact, as the scenario unfolds, it is a  
25 wonderful example of why these rules are in place and

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 34

1     should have been followed.

2                   On the airplane ride home from the Redondo  
3 Beach I had a chance to thoroughly review the UL  
4 fact-finding report. A number of real-world issues  
5 became readily apparent. This stuff only exists as a  
6 prototype. No product standards -- let me say that  
7 again. "No product standards" exist for this cable.

8                   Without a product standards, there are  
9 benchmark for meaningful evaluation and assessment.  
10 Because this product is a wiring system and entirely  
11 new, the proposal and comment should have been sent to  
12 Code Making Panel 7 for review. They need to determine  
13 the suitability of this product before the healthcare  
14 folks get a crack at it.

15                   Because the scope of the UL test was focused  
16 only on crushibility, the prototype was not tested as  
17 part of the wiring system. Because of this narrow  
18 scope, many questions remain unanswered. The insulation  
19 again on the prototype is significantly larger than  
20 normal branch circuit wire.

21                   It seems as though the insulation is actually  
22 being used as a strength member rather than a Dialector,  
23 which in and of itself, is kind of disturbing. The  
24 large physical layer of insulation poses some real-world  
25 issues.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 35

1           When you consider device connections, many  
2 device connections are designed for standard insulation  
3 levels. What happens when the insulation is  
4 significantly larger? Are they able to work? Do we  
5 have to pigtail it? Splices, particularly insulation  
6 displacement devices, are they able to work with this?  
7 Will they have -- is there going to be a significant  
8 problem with that?

9           And, finally, what I consider the most  
10 significant technical problem at all are box-fill  
11 calculations which are based on standard number 12 wire.  
12 Well, we go ahead and significantly increase the  
13 insulation on the wire, of course, they're going to  
14 impact that.

15           Well, considering the procedural technical  
16 uses as usually is involved with adopting 5 or 15-10 --

17           MR. BELL: Twenty seconds, please.

18           MR. LIPSTER: -- the head -- for that day is  
19 clear. Allowing the use of a prototype cable that is  
20 not available for use, has no product standards, has  
21 never been tested as a wiring system has no field  
22 performance record, in any case, is bad code.

23           It's really bad code when you consider this  
24 stuff maybe used in the most important branch circuits  
25 installed; those involved with patient care protecting

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 36

1 patient lives.

2 Please join me in supporting this motion and  
3 rejecting Comment 15-101.

4 Thank you.

5 MR. BELL: Thank you. Mr. Carpenter.

6 MR. CARPENTER: Yes. Thank you. I'd like to  
7 defer to Don Tanka, Chairman of Panel 15.

8 MR. BELL: You got to go to the microphone.

9 UNIDENTIFIED MALE SPEAKER: I'd just like to  
10 get a -- get a clarification. In the book it says the  
11 action is: "Reject," and down below it says, "Accept."  
12 Is the action of the panel "accept" or "reject?"

13 MR. BELL: As noted in the in the errata, the  
14 correct action in the report of comments is, "Accept in  
15 principle." And your name for the record?

16 MR. GOLDSMITH: Sorry. Jeff Goldsmith from GE  
17 Power and Water.

18 MR. BELL: Okay. So does that answer your  
19 question?

20 MR. GOLDSMITH: Yes.

21 MR. BELL: Thank you.

22 MR. GOLDSMITH: Below it says, "Reject above."  
23 It says, "Accept," below, and then it's actually --

24 MR. BELL: But there was an errata issued  
25 indicating the correct action which is, "Accept in

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 37

1 principle."

2 MR. GOLDSMITH: Thank you.

3 MR. BELL: Mr. Carpenter.

4 MR. CARPENTER: Now, I'd like to defer to Don  
5 Tanka, Chairman of Panel 15 at microphone 2.

6 MR. TANKA: Thank you. I'm Don Tanka, Chair  
7 of Panel 15 speaking on behalf of the panel action in  
8 opposition to the motion.

9 The subject of including MC cable into section  
10 517-30(C)(3) has been debated by Panel 15 for the three  
11 cycles that I have been involved as panel chair.

12 During the previous cycles, the panel rejected  
13 proposals to -- to include MC cable due to concerns  
14 regarding the mechanical integrity of the MC cable. The  
15 panel requested the submittal of the proposals and  
16 comments to provide evidence that MC cable could exhibit  
17 resistance to crush and impact equivalent to accepted  
18 wiring methods.

19 At the end of the two thousand and eight code  
20 cycle, the TCC directed the panel to hold Comment 15-39  
21 for further study during the two thousand and eleven  
22 cycle.

23 During the proposal stage of the two thousand  
24 and eleven cycle, additional information in the form of  
25 the UL fact-finding investigation dealing with relative

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 38

1 protection against screw penetration was provided.

2           The Panel sought additional data showing the  
3 crush and impact data equivalent to EMT.

4           At the ROC meeting, a new UL fact-finding  
5 investigation was submitted demonstrating that it was  
6 possible to design MC cable which exhibits crush and  
7 impact properties similar to that of EMT.

8           The Panel heard presentations by both  
9 proponents and opponents to Comment 15-101. In the end,  
10 the Panel voted eight in favor, three against with one  
11 abstention at the actual ROC meeting, and nine to two in  
12 favor during the formal ballot in favor of Comment  
13 15-101.

14           This is a case of the Panel indicating during  
15 the ROP stage what additional evidence it needed to be  
16 convinced that special construction MC cable could be  
17 considered as acceptable wiring methods in 15 dot  
18 30(C)(3).

19           This evidence was provided during the ROC as  
20 shown by the overwhelming vote in favor of Comment  
21 15-101. Concerning the comments suggesting that a new  
22 product should not be written into code until it is  
23 commercially available, I would like to point out that  
24 there are numerous instances where cose revision -- code  
25 revisions have driven product development.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 39

1           Thank you.

2           MR. BELL: Thank you. Further discussion,  
3   Microphone 5.

4           MS. HORTON: Pat Horton for the  
5   (undecipherable) Institute and I am in support of the  
6   motion.

7           Steve covered quite a bit of what I was going  
8   to cover and that's great because I want to -- like to  
9   reply to a little bit of what Mr. Tanka had to say.

10          Yes, they have been discussing this but it was  
11   unanimously rejected at the proposal stage, and the  
12   problem is one that the Chair pointed out at both  
13   proposal and comment meeting, and that was that there is  
14   no standard and no criteria, and there at least needs to  
15   be some criteria.

16          This is a proprietary product. Unless there's  
17   some criteria for what you test, other manufacturers  
18   don't even know what they have to meet, and it's not the  
19   policy of the NFPA to put in a proprietary product that  
20   nobody else has or can make.

21          I'm going to point out -- Steve pointed out a  
22   lot of the problems with installation, and the two  
23   voters against this were IBW and NEMA (phonetic) people  
24   who deal with the installation and knowing what they're  
25   going to face in the field.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 40

1           I am going to point out some of the things  
2 that are missing in the test procedure that was done.  
3 You need -- they only tested half-inch EMT. They need  
4 to test, and, at least, this is what we've always done,  
5 the smallest and the largest size that we've been  
6 permitted to be used and determine if the in-between  
7 sizes fall within there. That's one of the things.

8           They tested half-inch and the predominant use  
9 would probably be three-quarters, and when you go  
10 three-quarters, your mechanical protection is almost  
11 doubled.

12           When you perform the number of tests, it says  
13 that they go by 15-69, and on the impact test, the rule  
14 is that you test ten specimens and no more than two can  
15 fail. They never tested more than five, and, usually,  
16 just tested three. The determined effect of resistance  
17 was one of the things that made it be done.

18           In all instances, the EMT did not increase in  
19 resistance on the impact test. The new MC increased  
20 resistance by as much as two hundred and fifty-three  
21 percent.

22           Number of conductors; there were only three  
23 conductors in the EMT. I don't think that's realistic  
24 and it may make a difference. If it's three-quarters,  
25 it would certainly be more there. You need termination

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 41

1 decisions as Steve pointed out. I think Mr. Lloyd is  
2 going to address the differences in all kinds of MC  
3 cable.

4           It's the thing that we need something to go by  
5 so people know what they're evaluating. I have sat in  
6 co-panel meetings since 1981. I have seen many  
7 investigation reports, and in those investigation  
8 reports we went through them minutely. This was not  
9 done. We determined the things like that, that go back  
10 and said, "Go back and get this done."

11           I'd just -- trying to read to you what -- what  
12 UL said in their report. "In consideration of a  
13 fact-finding nature of the investigation, the foregone  
14 report is to be construed as providing factual  
15 information only, and should not be regarded in  
16 conveying any conclusions or recommendations on the part  
17 of Underwriters Laboratories regarding the construction  
18 of performance of the product or recognition by any code  
19 or standard or for any other purpose."

20           Now, that's very similar to their normal  
21 caveat which appears on the front of any investigation;  
22 however, it is somewhat more specific.

23           They also say that since this report focuses  
24 on the mechanical characteristics of the  
25 (undecipherable) as the type seek instruction as

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 42

1 (undecipherable) compared to listed type EMT, the means  
2 of terminating the cable or other aspects of its use  
3 were not investigated.

4 I don't think it says the review that it  
5 should have. There are a lot of things that need to be  
6 looked and, besides that, I would like to go on record  
7 as saying, "We probably will be appealing to the  
8 Standards Council on procedural issues," and I believe  
9 that's what you don't want to hear on the floor; am I  
10 correct?

11 No, you don't want to hear why.

12 MR. BELL: No.

13 MS. HORTON: Okay.

14 MR. BELL: You can say anything you want on  
15 the floor.

16 MS. HORTON: Okay. But, procedurally --

17 MR. BELL: But you -- you got twenty-three  
18 seconds left.

19 MS. HORTON: Okay. Well, I just wanted to go  
20 on record that we do see procedural issues, and one of  
21 them is that it can really review the written document,  
22 the item they want it in, Item 2, and not even the TCC  
23 approved Item 2. They approved a new 3 which used to be  
24 the old 2, so it got a lot of problems with how this was  
25 done -- handled.



**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 44

1           A good example is that -- is Article 501 where  
2           there is MC cable listed as a hazardous location because  
3           it has enhanced performance characteristics and those  
4           are set by a different Panel.

5           The Panel set a high level of physical  
6           protection of the EMT. In it, standard MC cable cannot  
7           achieve this higher level of protection. So that  
8           was what -- the fact-finding report was there to show  
9           proof of non-sub (indecipherable) that an MC cable can  
10          be built with a more robust performance and it can  
11          actually make these higher requirements which is what  
12          the Panel asked to see.

13          And, finally, the Panel asked for additional  
14          information with a fact-finding report. They were  
15          provided this information they requested. The Panel  
16          clearly accepted the information and ask you to support  
17          the Technical (indecipherable) Panel and oppose this  
18          motion.

19                 MR. BELL: Thank you. Microphone 7.

20                 MR. BENNINGER: My name is Jake Benninger, and  
21                 I represent the IBW. I support the motion to reject  
22                 Comment 15-101. It seems to me that patient care areas  
23                 are probably not a place you want to minimize the  
24                 integrity of what's been a proven wiring method  
25                 especially with a product that doesn't have a product

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 45

1 standard.

2           Also, the Committee didn't have adequate time  
3 to review the fact-finding report, and there was no  
4 opportunity for the peer review of fact-finding report  
5 for a product that doesn't exist.

6           So I encourage you to support you to support  
7 the motion.

8           MR. BELL: Thank you. Microphone 4.

9           MR. ODIE: Mark Odie, Underwriters  
10 Laboratories, speaking against the motion. If you look  
11 in 90.4, last paragraph as far as enforcement is  
12 concerned, the code requires -- it says, "This code may  
13 require new products construction of materials may not  
14 yet be available at the time the code is adopted. In  
15 such event, the authority having jurisdiction may permit  
16 the use of products, construction, or materials that  
17 comply to the most recent previous addition of the code  
18 until, obviously, the -- the new material comes out  
19 and -- and it's an approved, oftentimes, listed  
20 material."

21           Similar applications throughout the history of  
22 the code have occurred. For example, I could have a  
23 low-water level light fixture in a swimming pool. When  
24 those first came out I don't think that they were  
25 available on the market for about two years, and -- and,

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 46

1 again, it wasn't until the industry caught up with the  
2 National Electrical Code that -- that that material,  
3 that low-water light was actually available.

4 AFCI's, same thing. So we have a history of  
5 sometimes being in front of the -- of the issues and  
6 requiring something or permitting something that may not  
7 yet be available.

8 MR. BELL: Thank you. Microphone 7.

9 MR. WILKERSON: Robert Wilkerson, IEC, call  
10 for the question.

11 MR. BELL: Okay. A motion's on the floor to  
12 call the question. Is there a second?

13 UNIDENTIFIED SPEAKER: Second.

14 MR. BELL: All those in favor of the motion to  
15 call the question, please raise your hand?

16 Thank you.

17 All opposed.

18 Motion carries.

19 We're going to move to the motion on the floor  
20 which is to reject Comment 15-101.

21 All those in favor of the motion, please raise  
22 your hand.

23 Thank you.

24 All those opposed.

25 Motion carries.

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 47

1 MS. HORTON: (Inaudible.)

2 UNIDENTIFIED SPEAKER: (Inaudible.)

3 MR. BELL: I said the motion carries.

4 UNIDENTIFIED SPEAKER: (Inaudible.)

5 MR. BELL: I don't -- I don't think the vote  
6 was close.

7 Move on to Motion Sequence number 70-22. Is  
8 there a motion on the floor related to Sequence number  
9 70-22? Microphone 9 or is it microphone 7?

10 MR. CARPENTER: Seven; yes.

11 MR. ROBINSON: My name is Wayne Robinson. A  
12 retired chief electrical inspector from Anne Arundel  
13 County, Maryland. I'm making a motion to accept 70-22.

14 MR. BELL: Okay. Just make sure I understand  
15 the motion. The motion is to accept Comment 17-86; is  
16 that correct?

17 MR. ROBINSON: It's 17 -- let me see. I've  
18 got 17-22.

19 MR. BELL: Well, that's the motion sequence  
20 number. Your motion is to accept 17-86; is that  
21 correct?

22 MR. ROBINSON: That's correct; 17-86. Yes.

23 MR. BELL: Okay. Is there a second?

24 UNIDENTIFIED SPEAKER: Second.

25 MR. BELL: I hear a second. Please proceed.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 48

1           MR. ROBINSON: Well, I just want to start off  
2 firstly by saying that I was rejected on the basis that  
3 a test that I had done -- that a manufacturer had done  
4 by NEETRAC that it did not provide enough substantiation  
5 that the single-wire method that was adopted in the 2008  
6 was substantial.

7           So to give you a history of that, I want you  
8 to go back to the 2005 application where we did not have  
9 a single wire. The single-wire in the 2008 application  
10 was submitted by UL. I think Gary Stiggins, it was his  
11 proposal, and that -- what -- what happened was there  
12 was no documentation in the 2008 process that verifies  
13 that a single wire provides protection.

14           There was zero testing documentation. During  
15 a process for TIA, I contacted UL -- I mean, NFPA.  
16 Talked with many NFPA members. "We never provided a  
17 test."

18           Not 'til the TIA that was issued with a six to  
19 three vote with one abstention that they agreed --  
20 expect for an emergency nature -- that it should have  
21 been accepted.

22           During that process, there were some issues  
23 that was fought out by Code Making Panel 17 members.  
24 They told me to go through the process and make the  
25 corrections that they requested. I did that. And then,

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 49

1 again, in Redondo Beach, they rejected it again on the  
2 same basis.

3           The whole issue is is that that construction  
4 has changed. We used to have metal decking or steel  
5 decking around pools. This provided a potential plane.  
6 We have lost that plane.

7           We no longer have that plane. So we've gone  
8 to fiber crete, and now we've got a single wire with no  
9 documentation for that single wire. Okay. So, now, did  
10 the test. A test through NEETRAC which is the same  
11 organization that did testing under the 2008 application  
12 for buying a pool water under 6-80-26(C).

13           The Code Making Panel had no issue with the  
14 NEETRAC Test under 6-80-26(C), but, again, now they're  
15 having problems with that based on no zero -- no  
16 baseline done on the testing. But it's an actual test,  
17 and it's proven that the single-wire's unsafe.

18           And, again, remember in the 2000 -- I was here  
19 in the 2005 process -- no, 2008 process, and I said,  
20 "There's no documentation for a single wire." We still  
21 don't have it. But yet we have it in the code still.

22           So it's -- this motion to do away with that  
23 single wire. This is just an alternate method. We're  
24 not talking about doing away with steel decking or  
25 putting steel in decks; but, on the alternate methods,

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 50

1 we try and eliminate the single wire because there is no  
2 support documentation.

3 I have testing it says it doesn't work. So  
4 that's where I stand.

5 Thank you.

6 MR. BELL: Thank you. Mr. Carpenter.

7 MR. CARPENTER: Yes. I'd like to defer to Don  
8 Johnson. The chair of Panel 17. Microphone 9.

9 MR. JOHNSON: Thank you, Mr. Chairman. My  
10 name is Don Johnson. I'm the chairman of Panel 17. As  
11 chairman, I support the committee's action on Proposal  
12 17-179 and Comment 17-86.

13 The proposal returns the present code  
14 requirement of a single-wire ground ring to the 2005  
15 code requirement for a ground grid required to reduce  
16 step and touch potential at the three-foot perimeter  
17 surface area around the swimming pool to a safe level.

18 The Committee reviewed the submitter's  
19 presentation, substantiation, and documentation  
20 including the NEETRAC project 08-132 report titled,  
21 "Evaluation of Ground Ring versus Equal Protection Math"  
22 at a swimming pool in Buford, Georgia.

23 The submitter's verbal mention of a report  
24 titled, "Elevated Neutral to Earth in Voltages and  
25 Distribution Systems: Evaluation of Mitigation Options

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 51

1     Around Swimming Pools and Spas," by E.P.R -- by E.P.R.I.  
2     in support of his position was not reviewed as it was  
3     still in draft forms and not published.

4             The Committee does not agree that the  
5     submitter substantiation provides adequate justification  
6     to change the alternate means of perimeter bonding per  
7     the current code. The Committee does not agree the  
8     submitter has documented the present alternate means of  
9     perimeter bonding results in unsafe voltage gradings.  
10    Thank you.

11            MR. BELL: Thank you. Further -- further  
12    discussion? Microphone 4.

13            MR. ODIE: Mark Odie, Underwriters  
14    Laboratories, speaking against the motion.

15            If you look at this, this was put in as a TIA  
16    for the 2008 NEC. It did not pass. It was brought up  
17    then again in the 2011 as a new proposal. Proposal  
18    17-179 again was rejected by Panel 17 with the following  
19    comment.

20            "Present alternative method of perimeter  
21    bonding was not demonstrated to be unsafe. The test  
22    data provided by NEETRAC, the testing organization that  
23    established the test criteria and test data, has not  
24    shown that the difference in voltage gradients between  
25    the ground mat installation proposed and the ground ring

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

1 installation as currently permitted under the 2008 NEC  
2 is unsafe."

3           According to the test report of NEETRAC dated  
4 August 2008, there was a voltage of 12.5 volts at a  
5 distance of three feet away from the pool at the further  
6 test point from the source.

7           Well, with the bonding grid, the level of the  
8 same location was 1.5 volts. Neither this test data nor  
9 other demonstrated or documentation has been submitted  
10 to show that an installation using just a ground ring  
11 results in a difference in potential to a level that's  
12 dangerous or has caused injury.

13           The Panel evaluated the report from NEETRAC  
14 and had many concerns, not the least of which was a test  
15 procedure, did not have a test control to establish the  
16 baseline before any additional tests were done.

17           If you're going to do a test, you need to  
18 establish the baseline first and then that gives you a  
19 basis for all of your other tests.

20           Comment 17-86 was rejected by Panel 17 with  
21 the following comment: "Panel does not agree with the  
22 submitter's substantiation in that it provides adequate  
23 justification to change the alternate means of perimeter  
24 bonding. Submitter has not documented that existing  
25 alternate means in the existing NEC results in unsafe

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 53

1 voltage gradients."

2           Again, there's no documentation showing in  
3 their testing that the single conductor bonding, the  
4 loop, in other words, is any less safe than -- than what  
5 the other system that they're proposing is.

6           I think this needs to go back. I think they  
7 need to do the proper testing and then submit that  
8 information back to Panel 17. It needs to have full  
9 documentation. They need to establish a baseline. All  
10 of the test parameters should be shown including the  
11 test parameters for the individual conductors not just  
12 the bonding methods.

13           Thank you.

14           MR. BELL: Thank you. Microphone 5.

15           MR. KOVACIK: Thank you, Mr. Chair. John  
16 Kovacik, Underwriters Laboratories, speaking as the  
17 representative for the electric section of the National  
18 Fire Protection Association, and speaking in support of  
19 the motion on the floor.

20           The Electrical Section of NFPA had a meeting  
21 earlier this week, and at its meeting the members of the  
22 section voted to support the motion on the floor. Thank  
23 you.

24           MR. BELL: Thank you. Microphone 7.

25           MR. ASSENSHAWK: Randy Assenshaw (phonetic)

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 54

1 representing International Brotherhood of Electrical  
2 Workers.

3 I'm the voting member of Panel 17. At the  
4 time Panel 17 voted, we were looking at a draft report.  
5 This was an alternate method in the draft report. But,  
6 looking at the final NEETRAC report that was issued to  
7 us now, there is a difference in the safety factor. And  
8 since we have different constructions in swimming pools,  
9 fiberglass versus the old grid -- grid and iron -- rod  
10 iron method, this does make sense.

11 And in the -- IBW is standing in support of  
12 this comment.

13 MR. BELL: Thank you. Microphone 7 again.

14 MR. ROBINSON: Wayne Robinson. Representing  
15 myself. My -- my -- my only basis is --

16 MR. BELL: Speaking for or against the motion?

17 MR. ROBINSON: I'm for the motion.

18 MR. BELL: Thank you.

19 MR. ROBINSON: The original change in the 2005  
20 to the 2008 application to a single wire had no testing  
21 documentation submitted by UL. It was their proposal.  
22 They didn't do any testing. So had they turned to us  
23 after we did testing saying, "We didn't do any testing,"  
24 when they made no effort when they submitted it to  
25 provide any documentation on a single wire.

**NFPA Meeting - June 10, 2010**  
**Technical Meeting**

Page 55

1           So it's kind of a double-standard and I'm not  
2 quite sure why. Thank you.

3           MR. BELL: Thank you. Microphone 4.

4           MR. HICKMAN: Palmer Hickman with the IBW.  
5 I'd like to call the question.

6           MR. BELL: Okay. There's a motion to call the  
7 question. Is there a second?

8           UNIDENTIFIED SPEAKER: Second.

9           MR. BELL: All those in favor of calling the  
10 question, please raise your hand.

11           Thank you.

12           All opposed?

13           Motion carries.

14           We'll move directly to the vote on the motion  
15 on the floor which is to accept Comment 17-86.

16           All those in favor of the motion, please raise  
17 your hand.

18           Thank you.

19           All those opposed.

20           Motion carries.

21           Is there any further discussion on NFPA 70 at  
22 this time? Microphone 2.

23           MR. KOVACIK: Thank you, Mr. Chairman. John  
24 Kovacik, Underwriters Laboratories. The point of  
25 information could you explain if -- and if you have

**NFPA Meeting - June 10, 2010  
Technical Meeting**

Page 56

1 already, I apologize. What happened to Motion 70-18?

2 MR. BELL: Motion 70-18 was not pursued.

3 MR. KOVACIK: Was withdrawn?

4 MR. BELL: Yeah. Right.

5 MR. KOVACIK: Thank you.

6 MR. BELL: You're welcome.

7 Any other discussion on NFPA 70? If not,  
8 thank you, Mr. Carpenter and to the TCC Chairs or TC  
9 Chairs for an excellent job this cycle. Appreciate it.

10 (APPLAUSE)

11 MR. CARPENTER: Thank you very much.

12 MR. BELL: This officially concludes the 2010  
13 Annual Association Technical Meeting. I want to thank  
14 you for your participation and interest and support.

15 I now declare this part of the meeting  
16 officially closed.

17 (APPLAUSE)

18 (WHEREUPON, THE CONFERENCE WAS CONCLUDED AT 3:52 P.M.)

19 -o0o-

20

21

22

23

24

25

