

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

NATIONAL FIRE PROTECTION ASSOCIATION
CONFERENCE AND EXPO

TECHNICAL MEETING (TECH SESSION)

MANDALAY BAY

Las Vegas, Nevada

Thursday, June 12, 2014

Reported by:

KIMBERLY M. LOWE

CCR No. 849

Job No. 1838218

PAGES 1-195

1 Las Vegas, Nevada, Thursday, June 12, 2014

2 8:00 A.M.

3
4 P R O C E E D I N G S

5 -oOo-

6 PRESIDING OFFICER: Good morning, ladies
7 and gentlemen. I'm James Golinveaux, and I have
8 the distinct pleasure and privilege of being a
9 member of your Standards Council. I now declare
10 that a quorum exists and convene the 2014 NFPA
11 Technical Meeting.

12 To assist me is Linda Fuller, recording
13 secretary of the council, who is serving as staff
14 coordinator. I'd also like to introduce
15 Kerry Bell, Chair of Standards Council;
16 Dawn Bellis, Secretary of the Standards Council. I
17 don't see Maureen. Maureen Brodoff, NFPA Vice
18 President and General Counsel. Sally Everett, NFPA
19 Associate General Counsel, and Michael Wixted,
20 Assistant Secretary to the Standards Council.

21 This session will be recorded by Veritext
22 of Las Vegas, Nevada.

23 First, let me introduce our safety issues.
24 Let's take a minute and note the exits from this
25 room. Please note that the nearest exit may be

Page 2

1 behind you. Now that you've noted the closest exit
2 to you, I'd like to inform your that the fire alarm
3 at the Mandalay Convention Center is a slow whoop,
4 along with flashing strobe lights, followed by a
5 voice announcement.

6 Do not use elevators. If you are a person
7 with a disability who has not already made
8 arrangements with NFPA for emergency evacuation,
9 please see someone at the NFPA registration desk
10 just outside the ballroom. More details can be
11 found in the More C and E information in the mobile
12 app or on page 9 of the conference guide.

13 As with any organization, we have certain
14 rules and protocols. First, the use of video
15 and/or audio recording devices of any type is not
16 allowed during the NFPA Technical Meeting. I would
17 like to call to your attention the Guide for
18 Conduct of Participants in the NFPA Codes and
19 Standards Development process. As a participant in
20 the process, you should be familiar with this
21 guide. I'd also like to call to your attention to
22 the NFPA Convention rules, which is set to the
23 process to be followed today. Copies of both
24 documents are contained in the NFPA Standards
25 Directory, which is posted on the NFPA Web site,

1 with copies also available at the NFPA registration
2 desk.

3 The certified amending motions that
4 comprise the agenda in today's session will be
5 taken in order as published in the NFPA Web site,
6 and the NFPA app and is entitled "NFPA Technical
7 Meeting (Tech Session) June 11-12, 2014, Agenda."
8 The primary regulations governing the NFPA
9 Standards Development Process, including processes
10 of amending motions at the NFPA Technical meetings,
11 are the regulations governing the development of
12 NFPA Standards, Regs. The Regs are also posted on
13 the NFPA Web site and are published in the NFPA
14 2014 Standards Directory.

15 I'd like to say a few words about the
16 actions that can be taken today and the voting
17 procedures. At this session, you are being asked
18 to act on certain motions pertaining to the
19 Technical Committee reports. The Technical
20 Committee reports, which are in two parts, the
21 first draft and the second draft report, both of
22 which can be found on the document information
23 pages on each -- for each standard on the NFPA Web
24 site.

25 Under convention rules, for a motion to be

1 considered for action at the NFPA Technical
2 Meeting, the intended maker of the motion must have
3 filed a notice of intent to make a motion, NITMAM,
4 prior to the published deadline of August 23, 2013,
5 for the fall of 2013 revision cycle standards;
6 February 7, 2014, for the annual 2014 revision
7 cycle standards.

8 These NITMAMs were received by a motions
9 committee appointed by the Standards Council's
10 chair. The motions committee certified these
11 NITMAMs in compliance with NFPA rules, as certified
12 amending motions, and published a final motions
13 committee report on October 18, 2013, for the fall
14 and 2013 revision cycle standards, April 4, 2014,
15 for the annual 2014 revision cycle standards.

16 The NFPA Technical Meeting (Tech Session)
17 June 11-12, 2014, Agenda, which can be found on the
18 NFPA Web site, combines all certified amending
19 motions, CAMs, from these two reports and
20 identifies the CAMs for consideration today. Only
21 certified amending motions together with certain
22 available follow-up amending motions, that is,
23 motions that become necessary as a result of a
24 successful certified amending motion, will be
25 allowed at this meeting. Additionally, a person

1 must sign in and indicate that they are, in fact,
2 here to pursue their motion.

3 As part of these procedures, statements
4 for the record, that is, statements concerning
5 Technical Committee actions for which no certified
6 amending motion or allowable follow-up motion is
7 available are not permitted.

8 In accordance with Section 4.5.3.7b of the
9 Regs, if a quorum is challenged and found no longer
10 to be present 100 members, the session will be
11 terminated without further action upon the reports.
12 Any reports on standards that have not been acted
13 on shall be forwarded directly to the council
14 without recommendation of this meeting for action
15 in accordance with Section 4.7 of the Regs.

16 If a quorum is lost during the
17 consideration of a report, any motions to amend or
18 return that report have passed, prior to the loss
19 of a quorum, will be processed forwarded to the
20 council in accordance with Sections 4.5.3, 4.6, and
21 4.7 of the Regs.

22 Any appeal, based on the action of the
23 association at this meeting, must be filed with the
24 Standards Council within 20 days of this meeting.
25 That is, by July 3, 2014.

1 Any amendment accepted at this meeting
2 that fails to pass the subsequent committee ballot,
3 an appeal shall be filed no later than five days
4 after the notice of amendment ballot results are
5 published in accordance with Section 4.2.6. The
6 results of the amending ballot will be published in
7 accordance with Section 4.2.6 typically within 10
8 to 30 days after the final day of the NFPA
9 technical meeting.

10 The votes cast in this NFPA Technical
11 Meeting today and the discussion that leads to the
12 voting and integral and important part of the NFPA
13 consensus process. The NFPA Technical Meeting is
14 the forum where the membership considers changes to
15 the record prepared by the NFPA technical
16 committees concerning the proposed revised NFPA
17 codes and standards when such changes are pursued
18 via certified amending motions.

19 Through the motions, debate, and voting at
20 this meeting, the membership makes recommendations
21 to the Standards Council. The Standards Council,
22 under NFPA rules, is the official issuer of all
23 NFPA codes and standards. The majority vote of the
24 persons present here today is for the sole purpose
25 of making recommendations to the Standards Council

1 on the disposition of the report.

2 The Standards Council will meet on
3 August 11 through 14, 2014, to make a judgment on
4 whether or not to issue an NFPA standard. The
5 Council's decisions on standard issuance is based
6 on the entire record before it, including the
7 discussion and the vote taken at this NFPA
8 Technical Meeting. Limited review, following the
9 action by the Standards Council, may also be
10 available through a petition to the board of
11 directors. Any such petition must be filed within
12 15 days of the Council's action in accordance with
13 the regulations governing the petition of the board
14 of directors from decisions of the Standards
15 Council. The deadline for notice of such petition
16 is August 29, 2014.

17 With respect to the voting procedures, the
18 Reg states that the voting in NFPA Technical
19 Meeting shall be limited to the following:

20 Those present who are voting members of
21 the association, that is, with red badges with
22 "voting" on the top of the -- on the top or beige
23 badges with "voting tech session only" across the
24 top. You need not be a member of a NFPA section in
25 order to vote. You must, however, be a NFPA voting

1 member. Only voting members of records shall be
2 seated in the front area.

3 Voting will be undertaken in the following
4 manner. There will be no voice votes. The vote
5 will be taken by using electronic voting devices
6 for voting members.

7 I want to say at the outset, I will not
8 cast a vote. In the event of a tie, the issue
9 automatically fails. Once a report of a certified
10 amending motion is presented, it is open for
11 discussion. Anyone in the room has the privilege
12 of participating. The Chair asks that you preface
13 your remarks with your name, your company or
14 organization affiliation, and whether you are for
15 or against the motion. Let me repeat that. Your
16 name, your company or organization or affiliation,
17 and whether you are for or against the motion.

18 Should you preface your remarks -- even if
19 you have been to the microphone against a motion,
20 you should preface your remarks, even if you have
21 been to the microphone many times, since we are
22 having the meeting transcribed for the record.

23 As you can see, we have given -- we have
24 green and red signs on the microphones in the room.
25 The green signs indicate support of a motion on the

1 floor. And the red signs indicate opposition to a
2 motion on the floor. I would also ask that you
3 stand at the appropriate mic and state at the
4 beginning of your remarks whether you are in
5 support or opposition of a motion being debated.

6 Now, a couple of things to note during the
7 floor debate today. First, please be aware that no
8 one participating in the floor motions and debate
9 at this meeting is authorized to act as an agent or
10 speak on behalf of NFPA. Views expressed during
11 the motions and debates, including those expressed
12 on behalf of NFPA technical committees or other
13 entities operating within the NFPA system, do not
14 necessarily reflect the views of the NFPA.

15 A second note about NFPA sections. From
16 time to time, the chair or other representatives of
17 an NFPA section, may rise, during a debate, to
18 state the position of an NFPA session on a motion
19 that is under consideration. NFPA sections are a
20 group of NFPA members organized around a particular
21 subject such as electrical, fire service, health
22 care sections. Under the regulation governing NFPA
23 sections, a section may take a position on an issue
24 on the floor of an NFPA Technical Meeting. The
25 position of the section does not necessarily

1 reflect the views of all section members, rather a
2 section may state a position or a motion if the
3 majority of the section members attending a section
4 meeting have approved that petition and there are
5 at least 25 votes cast at the section meeting.

6 The position of a section in -- in
7 accorded, no special status in the NFPA standards
8 development process, just as you would with any
9 other position expressed during the debate today,
10 as voting members of the association, may weigh and
11 assess such positions as you deem appropriate.

12 In order to effectively conduct this
13 meeting, we will start with three minutes per
14 speaker. But it is my plan to limit the time, as
15 appropriate, in the event that that becomes
16 necessary. When you have one minute remaining of
17 your allotted time, you will hear a bell sound; and
18 a timer will appear in the circular screen behind
19 me to indicate that you have one minute remaining
20 in your allotted time.

21 The presiding officer reserves the right
22 to hear any new speaker before yielding the floor
23 to anyone wishing to address the same issue a
24 second time. Motions that are in order, the
25 certified amending motions are contained in the

1 agenda entitled "NFPA Technical Meeting (Tech
2 Session) June 11-12, 2014, Agenda, which is
3 available on the NFPA Web site and on the NFPA app.

4 The motions pertaining to the standard are
5 contained on pages 90 through 91 of the NFPA
6 Conference and Expo program. As previously stated,
7 this meeting is conducted in accordance with the
8 NFPA convention rules that are available on the
9 NFPA Web site. There are copies at the NFPA's
10 registration desk.

11 Upon completion of the action of certified
12 amending motions related to an NFPA standard, the
13 presiding officer will entertain any follow-up
14 motions, a follow-up motion that becomes necessary
15 as a result of a successful amending motion. A
16 motion to return a standard affected by a previous
17 successful amending motion is always in order as a
18 follow-up motion so long as -- so long as it is not
19 repetitious.

20 The presiding officer shall make the
21 determination whether a motion is a proper
22 follow-up motion. The maker of the motion shall be
23 required to explain why the motion is proper as a
24 proper follow-up motion. A follow-up motion
25 requires two seconders to continue on the floor.

1 Before we begin today, I'd like to address
2 the electronic voting devices. The devices will
3 record your support or lack of support of the floor
4 motion -- of the motion on the floor.

5 There are a few rules that I need to make
6 you aware of. No. 1, all voting members that were
7 issued an electronic voting device are responsible
8 for the device. Each device has been linked to the
9 voting member's name, and if the device is lost or
10 broken, they will be held responsible for the
11 replacement of the device.

12 No. 2, at no time can you hand off your
13 device to anyone to input your vote. Anyone found
14 with multiple units will be asked to leave the NFPA
15 Technical Meeting.

16 No. 3, you must return your device to the
17 NFPA staff manning it at the table at the back of
18 the room as you leave the session.

19 Now that we've read all the rules, let's
20 talk about what to expect today. This will be the
21 first NFPA Technical Meeting governed under the
22 NFPA regulations governing the development of NFPA
23 standards. These rules that are -- that we're
24 operating under today are designed to improve the
25 efficiency and the quality of the NFPA Technical

1 Meeting, eliminating the need to -- need to present
2 uncontested standards by giving you, the NFPA
3 membership, advanced notice of the amending motions
4 that are to be presented and giving me access, as
5 the presiding officer, greater discretion in
6 managing the debate to ensure that the issues are
7 fully debated as possible in the available time.

8 We have made a number of changes to the
9 NFPA technical meeting to comply with these Regs to
10 make the tech session a more useful tool for NFPA
11 members.

12 So, okay. What is new? Well, to begin,
13 the NFPA has gone electronic. We have an
14 electronic agenda that shows you the recommended
15 text for the motion is proposed, and the second
16 draft text, the last position of the committee. We
17 have five screens behind me that will be displaying
18 the text applicable to each motion.

19 Please note that some motions contain too
20 much text to fit on the screen. So please refer to
21 your agenda when that occurs. We will be showing
22 and voting on the CAM with the added benefit of
23 seeing the actual text that is recommended for
24 insertion into the NFPA standard. No more
25 guessing. You can actually see the text you are

1 voting on.

2 Screen one will show you the recommended
3 text if the motion passes. Screen two will show
4 you the resulting recommended text if the motion
5 fails. The middle screen will show the actual
6 motion, and we'll also use that screen to project
7 the "I made camera" capturing the debate --
8 capturing during the debate. I hope you're all
9 ready for that.

10 As with all new things, let's try it out.
11 We have a sample motion that we will project on the
12 screen, and we will have you vote on whether you
13 are in favor of the recommended text or opposed to
14 the recommended text. So let's get ready.

15 There is a motion on the floor for
16 NFPA 6000. It is Motion 6000-1. We're displaying
17 on screen one the recommended text if Motion 6000-1
18 passes. On screen two, we are showing the
19 recommended text if Motion 6000-2 should 6000-1
20 fails.

21 On the middle screen, we're showing the
22 motion. This is what you will see for each motion
23 under consideration today. There is no guesswork.
24 You are seeing actually what the text of NFPA 6000
25 would look like if you recommend screen one or

1 scene two.

2 Now let's test the voting devices. The
3 motion on the floor is to accept the Public Comment
4 No. 25.

5 Is there any further discussion on the
6 Motion 6000-1? Seeing none, we'll move for a vote.

7 Before we vote, let me restate the motion.
8 The motion on the floor is to accept Public Comment
9 No. 25.

10 If you wish to vote in favor of the
11 motion of the recommended text on screen one, press
12 one.

13 If you wish to vote against the motion
14 on -- recommended on the text on screen two, press
15 two. Please record your vote.

16 Voting will close in five seconds. The
17 balloting is closed.

18 I agree. Thank you. The results of the
19 votes are 82 for the motion to be recommended on
20 text screen one, 126 against the motion
21 recommending the text on scene two. The motion has
22 failed.

23 It is my hope and expectation that
24 together we make the NFPA Technical Meeting a
25 success, and I thank you in advance for your

1 corporation, patience and, when you are done, your
2 comments and suggestions for the future.

3 Please note that we will be taking comfort
4 breaks as necessary.

5 One last notice, before we begin, the
6 authorized maker of the motion of NFPA 70E and
7 NFPA 59 have notified NFPA that they no longer wish
8 to pursue this motion. Therefore, in accordance
9 with NFPA rules, Convention Rules at 2.7, the
10 motion may not may not be considered by the NFPA
11 membership and is removed from the agenda.

12 At this point, before we begin the
13 standards, I would like to introduce Kerry Bell,
14 Chair of the Standards Council, and Dawn Bellis,
15 Secretary of the Standards Council, who will
16 present special achievement awards and committee
17 service awards.

18 Kerry and Dawn.

19 MR. BELL: Thank you, James. And good
20 morning, everyone.

21 Special achievement award is presented to
22 a committee member for their significant
23 contributions for a single project that has
24 enhanced the NFPA standard development process. We
25 have one special achievement award to present here

1 this morning, and this here award goes to Gayle
2 Pennel of Aon Fire Protection engineering.

3 Gayle, please join me on stage.

4 (Applause.)

5 MS. BELLIS: Gayle is being recognized
6 today for his active role on the NFPA 25, standard
7 on Inspection Testing and Maintenance of
8 Water-Based Systems project. He was the task group
9 leader working on fire pump inspection testing and
10 maintenance activities in Chapter 8 and was
11 instrumental in resolving the fire pump test
12 frequency issue that the Technical Committee on
13 Inspection, Testing, and Maintenance of Water-Based
14 Systems have been struggling with for several
15 cycles. Gayle contributed as the contractor for
16 the Fire Protection Research Foundation, Fire Pump
17 Field Data Collection, and Analysis project, which
18 studied modes and pump reliability. This
19 information was instrumental in getting the task
20 group and Technical Committee to achieve consensus on
21 this chapter for the 2014 edition for NFPA 25.
22 Gayle also assisted in developing fire modeling
23 scenarios studying fire size and sprinkler
24 activation time during the NFPA 25 Technical
25 Committee review of the antifreeze issue. Gayle

1 additionally chaired the NFPA 20, 24, 25 pressure
2 surge task group. Gayle's dedication to the NFPA
3 25 project and other NFPA standards development
4 activities make him a natural choice for this
5 award.

6 (Applause.)

7 MR. BELL: This award recognizes -- not
8 only recognizes Gayle's leadership and personal
9 contributions with the Inspection, Testing, and
10 Maintenance standard, but also all the efforts of
11 all involved with other committee projects that
12 Gayle has been involved in in over the years.
13 Please join me again in congratulating Gayle on
14 this special achievement award.

15 (Applause.)

16 MR. BERRY: This concludes the special
17 achievement award. We'll move on to the committee
18 service awards.

19 The committee service award is given to a
20 technical committee member for continuous and
21 exemplary service on one or more committees over a
22 substantial period of time and in recognition and
23 appreciation of distinguished service to NFPA in
24 the development of NFPA codes and standards. I'm
25 pleased to present this award today to the

1 following very worthy individuals.

2 Our first recipient of the committee
3 service award is John Rickard. John, please join
4 me on stage.

5 MS. BELLIS: John A. Rickard of P3
6 consulting in Austin, Texas serves on the Technical
7 Correlating Committee on Building Construction and
8 Safety Code. The Building Construction and Safety
9 Code Technical Committees, including health care
10 occupancy, board and care facilities, building
11 materials, and building systems where he served as
12 chair from 2002 through 2012. He also served on
13 the Life Safety Code Technical Committees on Health
14 Care Occupancies and Board and Care Facilities.

15 John is a member of the Standards Council.

16 MR. BELL: We have five additional
17 committee service award winners who were unable to
18 be with us here today, and we'd like to acknowledge
19 and thank them for their service.

20 MS. BELLIS: The NFPA Technical Committee
21 members who are unable to join us today are Dwight
22 H. Havens, Bechtel Marine Propulsion Corporation,
23 Malta, New York; Thomas Forsythe, Hughes
24 Associates, San Ramon, California; Peter J. Willse,
25 XL Bell Global Asset Protection Services, Hartford,

1 Connecticut; Robert M. Gagnon, Gagnon Engineering,
2 Woodbine, Maryland; and John C. DeRuyter, the
3 DuPont Company, Inc., Wilmington, Delaware.

4 MR. BELL: On behalf of the NFPA Standards
5 Council, I would again like to say thank you to all
6 of these individuals.

7 This concludes the awards ceremony. We're
8 going to turn the floor back over to James, and
9 we'll continue with the association technical
10 meeting.

11 PRESIDING OFFICER: Thank you, Kerry. And
12 thank you, Dawn.

13 The first standard I have been assigned to
14 be the presiding officer over is NFPA 720.
15 Appeared on the agenda, however, no one has signed
16 in to make a certified amending motion on this
17 standard. Therefore, in accordance with NFPA
18 rules, Regs at 4.5.3.7 and convention rules at 2.7,
19 the standard will not be considered at this meeting
20 and instead becomes a consent standard that will be
21 forwarded directly to the Standards Council for
22 issuance or other action.

23 We would like to thank the committee for
24 their work on this standard. We will now move to
25 the next standard.

1 My second standard is NFPA 59. NFPA 59
2 appeared on our agenda; however, the authorized
3 maker of the motion or their designated
4 representatives have notified NFPA that they will
5 no longer wish to pursue this motion. Therefore,
6 in accordance with the NFPA rules, convention rules
7 of 2.7, the motion may not be considered by the
8 assembly and is removed from the agenda.

9 We will now move on to the next standard.
10 So after waiting 32 years to preside over a debate,
11 both of my standards did not move an approved
12 motion. With that and before we begin the next
13 document, I'd like to introduce James Milke, member
14 of the Standards Council, who will be presiding
15 over the next four documents.

16 Jim.

17 (Applause.)

18 PRESIDING OFFICER: Thank you, James.
19 It's my pleasure to preside in this portion of the
20 meeting where we do have some standards to talk
21 about.

22 The next report under consideration this
23 morning is that of the Technical Committee on
24 National Fuel Gas Code. Here to present the
25 committee report is Committee Chair Thomas Crane of

1 Crane Engineering, Plymouth, Minnesota.

2 The committee report that is the first and
3 second draft reports are located on the document
4 information page for NFPA 54 on the NFPA Web site.
5 The certified amending motions are contained in the
6 NFPA Technical Meeting (Tech Session) Agenda and
7 will be displayed behind me on the screen. We will
8 proceed in the order of the motion sequence number
9 presented.

10 Mr. Crane.

11 SPEAKER: Mr. Chair, ladies and gentlemen,
12 the report of the technical committee on the
13 National Fuel Gas Code is presented for adoption
14 and can be found in the first draft report and the
15 second draft report for the 2014 annual meeting
16 revision cycle. The Technical Committee has
17 published a report consisting of revisions to
18 NFPA 54, the National Fuel Gas Code.

19 The report was submitted to letter ballot
20 of the Technical Committee which consists of 29
21 voting members. These reports and the ballot
22 results can be found on the next edition tab of the
23 document information page at www.nfpa.org/54next.
24 The presiding officer will now proceed with the
25 certified amending motions.

1 PRESIDING OFFICER: Thank you, Mr. Crane.
2 Let's now proceed with discussion on
3 certified amending motions on NFPA 54.

4 Microphone No. 1, please.

5 SPEAKER: Yes. My name is Robert Torbin.
6 I work for Omega Flex, and I'm speaking in favor of
7 the certified amending motion. I am the proponent
8 for this change, and it involves the use of --

9 PRESIDING OFFICER: Excuse me. Just a
10 moment, please. Thank you.

11 Can you state the motion, please, for us?

12 SPEAKER: The motion is to approve the
13 certified amending motion, which reads as follows
14 up here on this screen 7.13.2 that the add --
15 additional requirements CSST with an arc-resistance
16 jacket listed by the approved agency for
17 installation without the direct bounding, as
18 prescribed in this section, shall be installed in
19 accordance Section 7.13.1 and manufacturer's
20 installation instructions.

21 PRESIDING OFFICER: Okay. Mr. Torbin, so
22 the motion is to accept an identifiable part of
23 Public Comment No. 72. Identifiable part is the
24 text as shown.

25 Is there a second?

1 UNKNOWN SPEAKER: Second.

2 PRESIDING OFFICER: We do have a second.

3 Please proceed with the discussion on the
4 motion.

5 UNKNOWN SPEAKER: This certifying amending
6 motion involves the use of corrugated stainless
7 steel tubing, which has been used in the
8 United States for over 25 years. The only
9 difference is that this variety of CSST has a
10 conductive blackjacket compared to the traditional
11 insulating yellow jacket.

12 The black jacket CSST was introduced into
13 the U.S. market ten years ago. It is approved for
14 use in at least 15 states at the present time.
15 There are over 50 million feet of the black CSST
16 installed here in the United States.

17 One of the advantages of this particular
18 certifying amendment is that it will eliminate any
19 confusion regarding the bonding and grounding of
20 CCST that currently exists between NFPA 54 and NFPA
21 70, the national electrical code.

22 One of the reasons given by the Committee
23 for rejecting the original motion was the lack of a
24 national standard. NCLC-1, which is a national
25 standard for CSST, was amended and published in

1 March of 2014 to include additional testing
2 requirements for these arc-resistant jacket to
3 demonstrate efficacy of their ability to resist
4 electrical arcing included in the performance
5 requirements now in the LC-1 standard are tests for
6 electrical arc-resistance tests for resistance of
7 the jacket at low temperature to prevent
8 embrittlement test of the jacket for wear and tear
9 or ripping during installation and also corrosion
10 requirement in case the jacket includes metal
11 components.

12 CSA, which is a national recognized
13 testing lab, is in the process of testing and
14 certifying these black products. We will also know
15 that Omega Flex, which introduced its first black
16 product in 2004, now has three competitors -- or
17 three competitors in the market. So it would not
18 be any competitive advantage to Omega Flex if this
19 certifying amendment is approved.

20 These corrugated tubing products with the
21 black jackets that are currently listed by
22 (inaudible) and ICCPMG. So they, again, have been
23 evaluated and tested and approved by legitimate
24 codes and standards organizations. They are going
25 to be listed in the future to a national recognized

1 standard, and I encourage the membership to approve
2 this certifying amendment.

3 PRESIDING OFFICER: Thank you.

4 Mr. Krane, would you like to offer the
5 Committee's position?

6 SPEAKER: The Committee, in reviewing the
7 information presented during the revision cycle,
8 noted that the revised LC-1 standard, which is the
9 NC standard covering CSST, is currently out for
10 public review and, therefore, not been publish as
11 an NC standard. In addition, it was reported to
12 the Committee that test currently required and the
13 revised LC-1 draft is not the same test that has
14 been performed as part of the project for
15 validating the efficacy of the bonding methods
16 currently required by NFPA 54.

17 Therefore, it was the posture of the
18 committee, in reviewing the information before it,
19 that there was not sufficient evidence that they
20 described black jacketed product presents --
21 presents equivalent protection to bonding in
22 accordance with current code requirements.

23 PRESIDING OFFICER: Thank you, Mr. Krane.

24 With that, we will open up debate on the
25 motion. Please provide your name and affiliation,

1 whether you're speaking in support or against the
2 motion.

3 Microphone No. 2.

4 SPEAKER: My name Paul Cabot, and I'm with
5 the American Gas Association. I oppose the
6 standing motion on the floor and hope the
7 membership will vote with the committee. As you've
8 heard, the LC-1 -- the new version of LC-1 was not
9 considered by the committee.

10 ADA is an outstand -- is an unresolved
11 common to LC-1 regarding one aspect to LC-1 that
12 NFPA 54 was not able to address, and that is the
13 removal of some portion of the jacket when a
14 appli -- in its installation. Now, those not
15 familiar with the CSST installed typically and
16 often removed part of the jacket when they're
17 installing equipment or repairing damage to the
18 CSST.

19 Without knowing how much of that jacket
20 can be removed and when it can be removed, there is
21 concern that the arc-position jacket protection may
22 be compromised.

23 The committee did not get a chance to
24 review that data. They did not get a chance to
25 consider that because the standard was not

1 available at the time. So we believe it is
2 premature for the 54 to adopt this type of coverage
3 which would permit CSST with this arc-resistant
4 jacket not to have the direct bonding needs that is
5 currently required for all CSST.

6 Thank you.

7 PRESIDING OFFICER: Thank you.

8 Microphone No. 1.

9 SPEAKER: Thank you, Mr. Chairman. My
10 name is Ted "Lamothe." I'm a consultant. My
11 company's name is T. Lamothe Engineering, and I've
12 been working with the national field gas code as
13 the NFPA staff liaison from 1985 to my retirement
14 about three years ago. Since then, I've been
15 consulting; and I've been working with Omega Flex.

16 PRESIDING OFFICER: Could you state
17 whether you're for or against the motion?

18 SPEAKER: I'm speaking in favor of the
19 motion.

20 PRESIDING OFFICER: Thank you.

21 SPEAKER: First of all, in listening to
22 what's said, I want to provide a very brief
23 background of what we're talking about so you can
24 understand.

25 Traditionally, gas piping in buildings

1 have used in the United States copper tubing,
2 copper pipe, but not as much, and steel pipe.

3 Well, a new material came around 1988
4 edition of the code allowed -- accepted it, and
5 it's a corrugated material. It comes in long
6 rolls. And it has gained acceptance since that
7 time in 1988.

8 About ten years ago -- maybe a few -- 10
9 to 15 years ago an issue came about where there was
10 a number of failures that was traced to lightning
11 punctures. That's what we're talking about here,
12 how to prevent these lightning punctures. There
13 was a -- the matter was addressed by NFPA Standards
14 Council. The standards council have a task force.
15 I started on the task force as a staff liaison.
16 The task force of the council said, you know, you
17 really need to do some work to validate this
18 because it was done by engineering using
19 engineering judgment and their assessment.

20 And so a research program was done. It
21 was presented to the committee. Revisions were
22 made to the code, and there are no NITMAMs on that
23 made to this edition. We're not discussing that
24 today. And that is the conventional product. It's
25 called sometimes yellow because the jacket is

1 colored yellow.

2 Another -- and the results of the research
3 program validated that bonding, electrical bonding,
4 typically using No. 6 NWG copper wire or
5 equivalent, is effective in dissipating lightning
6 of protecting from these punctures.

7 What we have on the floor today is another
8 product, and it uses a conductive jacket and
9 basically they just put carbon in the polyethylene.
10 And so that's what we're talking about, and the
11 Committee is basically not allowing this to be
12 installed without a bond.

13 As you've heard, the Committee said -- one
14 of their issues was there was no standard. You've
15 heard there was a standard today.

16 I'm personally, as a former staff liaison
17 and committee member, disappointed by the
18 Committee's statement that the test method is not
19 the same as was used in the research program
20 mentioned. Well, a listing standard is different
21 from a research program; so they're not necessarily
22 the same.

23 My major point is data was presented to
24 the Committee, that the CSST with the arc-resistant
25 jacket, the black, had lightning puncture

1 resistance similar to copper tubing and superior to
2 the yellow or plain CSST, and the black jacket has
3 been tested since then using the same methods.

4 PRESIDING OFFICER: You're at time.

5 UNKNOWN SPEAKER: Thank you.

6 PRESIDING OFFICER: Thank you.

7 Further debate? Microphone No. 1.

8 SPEAKER: Robert Torbin with Omega Flex
9 speaking in support of the motion. Again, what was
10 submitted to the Committee at the time was the
11 draft's standard. So they knew what was coming in
12 the standard. The matter of fact, that was
13 debated. Data was submitted in terms of
14 performance comparison to bonding yellow, which is
15 the prescribed method at the present time. The
16 testing that was done, in fact, on black jacket was
17 identical to the testing done by the gas technology
18 institute to demonstrate the efficacy of bonding.
19 Testing physical, testing in computer simulations
20 were done on the black jacket to show that it's
21 equivalent, if not superior to bond the yellow
22 system. That data in form of colors was given to
23 the Committee.

24 Again, as I wanted to say once before,
25 this product is in the marketplace. It is being

1 used. It has been approved. It does address some
2 of the serious code conflict problems between a
3 national fuel gas code and the electrical code
4 regarding the bonding of these products. And
5 again, this particular certified amendment
6 basically is there to recognize what is already
7 being done in the marketplace; so again, I
8 encourage your approval of the certifying
9 amendment.

10 PRESIDING OFFICER: Thank you.

11 Microphone No. 2.

12 SPEAKER: Paul Cabot with the American Gas
13 Association in opposition to the motion.

14 Again, the Committee did not get a chance
15 to put a full debate on this new product. It's
16 being installed. There's nothing in the code that
17 prevents it from being installed. And I don't see
18 a conflict between NFPA 70 electric code and the
19 national previous code. NFPA 70 refers to the
20 national previous code regarding bonding of gas
21 piping systems.

22 I also want to point out that the industry
23 itself is aware of this concern regarding the
24 removal of the jacket. There is efforts underway
25 by the industry to revise LC-1 to address the issue

1 in future editions. So they're aware that this is
2 an issue, and I encourage, again, that this is
3 premature for the adoption into the 2015 edition
4 and that you wait for a full debate with the NFPA
5 54 Committee.

6 Thank you.

7 PRESIDING OFFICER: Thank you.

8 Mr. Crane, any further comments from you?

9 COMMITTEE CHAIR: Mr. Chair, no further
10 comments.

11 PRESIDING OFFICER: Any further discussion
12 on Motion 54-1 to accept an identifiable part on
13 Public Comment No. 72? Seeing none, we will move
14 to a vote.

15 Before we vote, let me restate the motion.
16 The motion on the floor is to accept the
17 identifiable part of Public Comment No. 72. If you
18 wish to vote in favor of the motion on recommended
19 text on screen one, press one. If you wish to vote
20 against the motion and recommend the text on screen
21 two, press two. Please record your vote.

22 Five seconds. Balloting is closed.

23 Thank you. The results of the vote are 59
24 for the motion recommended text on screen one, 156
25 against the motion and recommended text on screen

1 two. The motion has failed.

2 Let's now proceed with discussion on
3 Certified Amending Motion 54-2.

4 Microphone No. 1, please.

5 SPEAKER: Good morning. My name is
6 Dan Buuk. I represent the National Association of
7 Home Builders, and I move to reject Second Revision
8 No. 12 and any related portions of First Revisions
9 No. 68 and No. 69, thereby deleting the new section
10 and corresponding annex.

11 PRESIDING OFFICER: Thank you. There is a
12 motion on the floor to reject Second Revision
13 No. 12 and any related portion to First Revision to
14 No. 68 and 69, thereby deleting the new section and
15 corresponding annex.

16 Is there a second?

17 UNKNOWN SPEAKER: Second.

18 PRESIDING OFFICER: Thank you. We do have
19 a second.

20 Please proceed with discussion on the
21 motion.

22 Microphone No. 1.

23 SPEAKER: Thank you, Mr. Chairman.

24 Again, my name is Dan Buuk, representing
25 National Association of Home Builders, speaking in

1 support of the motion.

2 First of all, I like to point out that I'm
3 a member of the Combined National Forest Code
4 Technical Committee being a member of the AGA Z223
5 Committee. I also agree with the general intent of
6 this new section. However, there are some major
7 issues with it, which I brought forward to the
8 Committee in form of a Public Comment during the
9 second revision. However, it was rejected with no
10 technical substantiation.

11 I'd like to just make people here aware of
12 what this section would do. First of all, it
13 references Section 9.3 and Chapter 12. Those are
14 the sections with the requirements for combustion
15 air and appliance venting. So what this would do
16 is wherever a building envelope component other
17 than the shingles and roof tiles were altered or
18 replaced, you would have to inspect the combustion
19 air system as well as the appliance venting system
20 and verify that they were up to today's code.

21 However, first of all, the issue of
22 scoping. The trigger mechanism for this section
23 does not fall under the National Fuel Gas Code.
24 It's in the wrong code. This is a weatherization
25 issue. It belongs in the energy code. The energy

1 code then should point to Sections 9.3 and
2 Chapter 12 of the National Fuel Gas Code. In other
3 words, right pew, wrong church.

4 Secondly, there is no minimum requirement
5 for the trigger. If you replace a broken pane of
6 glass, if you replace a panel of vinyl siding doing
7 maintenance work, technically this will be
8 triggered, possibly costing the homeowner thousands
9 of dollars.

10 The annex language that's up there even
11 mentions cracked ceiling. That's doing caulking.
12 If you caulk one window, this would be triggered.

13 So I ask you to support the motion. Let
14 us bring this back into the correct code because I
15 believe the intent is good, needs to be addressed.
16 This is an issue that does need to be addressed; so
17 please vote for the motion, and we'll bring it back
18 in the correct code.

19 Thank you.

20 PRESIDING OFFICER: Thank you.

21 Mr. Crane, would you like to offer the
22 Committee's position?

23 SPEAKER: The Committee's position
24 regarding the existing language that is subject of
25 this motion was motivated by the awareness of the

1 members of the Fuel Gas Code Committee; that the
2 safety and the operation particularly with regards
3 to venting and ventilation of gas appliance can be
4 and has been seen to be materially affected by
5 changes in the building envelope. The obvious
6 impact comes from the availability of venting and
7 ventilation combustion air.

8 The Committee added a new requirement to
9 ensure that appliance installations are inspected
10 to ensure combustion -- combustion and ventilation
11 air supplies have not been compromised by changes
12 to the building envelope.

13 The wording that we see that is the
14 subject of this motion is the results of the
15 Committee's work to try to draft a version which
16 will address fundamental underlying issue, not
17 about new appliances installation but the condition
18 and the safety of existing installations as they
19 may be affected by changes to the building
20 envelope.

21 PRESIDING OFFICER: Okay. Thank you,
22 Mr. Crane.

23 With that, we will open up debate on the
24 motion. Please provide your name and affiliation
25 and whether you're speaking in support or against

1 the motion.

2 Microphone No. 2.

3 UNKNOWN SPEAKER: Paul Cabot with the
4 American Gas Association, and I'm against the
5 motion on the floor.

6 We were the original proponents of the
7 change and also submitted comments to the Committee
8 that further refines what you see up there as the
9 end result.

10 Some of the concerns that NHP brought
11 forward to the Committee, after the first public
12 draft, was the fact as a result restricted.
13 Comments provided to the committee and the
14 Committee accepted it. Revised, though, to make it
15 a little less restricted. Allowing, for instance,
16 the changing of roof shingles, allowing for
17 appliances that are not within the condition
18 envelope not to be affected by this change. So if
19 you have appliance in a garage or an attic
20 location, this new section would not be triggered.

21 Combustion air is a long and venting
22 performance. It's a long-term subject of the
23 National Fuel Gas Code. It is a primary safety
24 concern of the code. It is in the right code.

25 Other building codes will now start to

1 reference this section regarding the inspection of
2 the appliances when major changes to the envelope
3 are undertaken.

4 We view this change as no different than a
5 change to the gas piping system in which, if you
6 change any portion of that, any appliance through
7 the piping system, the installer must go back and
8 evaluate the entire system to make sure it can
9 provide gas to all the appliances. It's no
10 different than if an installer was to revise the
11 venting system, in which case you have to go back
12 and review to make sure that the entire venting
13 system is up to code and can vent all the installed
14 appliance.

15 This is combustion air. This is venting
16 performance. It is no different if you change an
17 aspect of the envelope, which always has been
18 considered when an installer is judging whether or
19 not you can use indoor air to supply the combustion
20 air or you use outdoor air.

21 So you change the component of the
22 envelope. It changes, perhaps, the -- impacts,
23 perhaps, the appliance combustion and venting
24 performance. There is no difference than we ask
25 that the installer goes back and make sure that

1 those appliance -- the existing appliance
2 installation is safe.

3 So I encourage the membership to reject
4 the motion and to add this new section into the
5 National Fuel Gas Code.

6 PRESIDING OFFICER: Thank you.

7 Microphone No. 1.

8 SPEAKER: Good morning. My name is
9 Rick Youngblood. I'm here representing Ferrell
10 Gas, and I'm speaking in favor of the motion.

11 We're concerned that the code is written
12 and places a burden on suppliers and the
13 homeowners. We're concerned that homeowners will
14 be expected to inform the supplier and to make a
15 change to the building envelope. And if the
16 supplier is not made aware of the building
17 envelope, the supplier will be held accountable on
18 inspections that were not performed.

19 Thank you.

20 PRESIDING OFFICER: Thank you.

21 Microphone No. 3.

22 SPEAKER: Ken Dunkin, Performance Designs
23 Technologies. I'm speaking in favor of the motion.

24 I've seen enforcement problems well. I
25 don't see how someone who's in the business of

1 replacing windows or doors or weatherizing homes
2 has a mechanism for initiating an inspection of gas
3 burning appliances. And you know, if they don't,
4 are they going to be held accountable?

5 So I don't see how this is enforceable. I
6 would encourage people to vote for the motion.

7 PRESIDING OFFICER: Thank you.

8 Microphone No. 1.

9 SPEAKER: Ted Lamothe, Lamothe
10 Engineering. On this subject, I'm speaking for
11 myself. I'm a member of the committee. I voted
12 against this.

13 First of all, I am very well aware for the
14 need for proper air for combustion and ventilation
15 for appliances and the need for proper venting.
16 And it is well known that, if you tighten the
17 envelope over the house, you compromise the air.
18 You can choke the appliances, make carbon monoxide.
19 No one wants to see that happen.

20 And the Committee has addressed this. You
21 don't see carbon monoxide, but it's there, and the
22 requirements for proper air and ventilation. The
23 issue here is, if a carpenter replaces a window, if
24 he doesn't do those calculations, if I caulk the
25 window, I now have to do those calculations. If

1 you caulk a window, are you going to know how to do
2 the calculations? Are you going to be able to find
3 someone who will do them?

4 I think this is, as it's been said by
5 others, unenforceable. I think the problem is the
6 paragraph is very broad. There is some explanation
7 in the annex. It's not mandatory, but people will
8 use it to the point of that every time you caulk a
9 crack, you've got to recheck the envelope.
10 Certainly, if you replace all windows, yes, it's
11 important. But remember, replacing a window in
12 many, many states, is a maintenance issue and
13 doesn't require a permit. I'm not familiar with
14 all the states.

15 Mr. Chairman, thank you. I encourage you
16 to vote in support of this motion.

17 PRESIDING OFFICER: Thank you.

18 Microphone No. 2.

19 SPEAKER: Paul Cabot with the American Gas
20 Association in opposition to the motion on the
21 floor. I heard testimony that this an important
22 safety issue; so we cannot ignore this. This is an
23 excellent first step in regards to protection of
24 existing installation. Not shown here is companion
25 change that is not subject to any motion here but

1 that is a completely rewritten Annex G regarding
2 the inspection on existing appliance installation,
3 provides a step-by-step way of determining whether
4 you have sufficient combustion air as well as a
5 step-by-step method of reviewing whether your
6 venting system is properly performing.

7 So the Committee did recognize that the
8 code did need additional inspection guidance, and
9 they rewritten, which went from two columns to four
10 pages. So it recognized that. I just want to
11 address the enforcement issue. It's outside the
12 scope of the National Fuel Gas Code that, if we
13 left up to the local cities and states that adopt
14 the National Fuel Gas Code as to how they want to
15 present the permitting requirements for this and
16 who will be responsible for the inspection.

17 So, again, I encourage the membership to
18 support the Committee.

19 PRESIDING OFFICER: Thank you.

20 Microphone No. 1.

21 SPEAKER: Thank you, Mr. Chair.

22 Dan Buuk representing National Association
23 of Home Builders speaking in support of the motion.

24 To address Mr. Cabot's point that scoping
25 is outside of this document, I would agree.

1 Unfortunately, it has included the scoping for this
2 section saying that where a building envelope
3 component other than roofing material is replaced
4 or altered. That's the scoping for the rest of
5 this requirement. It doesn't say "as required by
6 building code."

7 If the building code points to this
8 section, this is the text that you get to. It
9 doesn't offer the ability to reduce that down. The
10 point was made that windows don't require permanent
11 in many areas. Siding also does not. Neither does
12 caulking.

13 The reason for rejecting my public comment
14 the Committee gave was because the new requirement
15 is needed guidance for weatherization programs.
16 That's the entire statement from the Committee.

17 Well, this document, the National Fuel Gas
18 Code is not for guidance. This is a law. When
19 it's adopted, it becomes law. It's a requirement.
20 You shall. If you want guidance, you have to do
21 education or some type of get-the-word-out. So
22 this isn't the place for guidance. It also is not
23 the -- what the weatherization programs want.

24 We received a letter from BPI, one of the
25 nation's leading weatherization organizations. And

1 they do not like this because it conflicts with
2 their policies, their requirements for checking
3 combustion air and appliance venting. So this --
4 the reason -- the reason given by the Committee for
5 rejecting the Public Comment goes against the
6 weatherization program that are out there. They do
7 not need this guidance. They already have their
8 own.

9 Thank you.

10 PRESIDING OFFICER: Thank you.

11 Microphone No. 5.

12 UNKNOWN SPEAKER: I'm Jeff Shapiro with
13 the is National Multifamily Housing Council. I
14 want to thank the proponent for doing a very good
15 job for laying out the issues here. I didn't have
16 a complete grasp until I've heard the testimony. I
17 think they've made a very compelling case to
18 support this motion.

19 No matter how well intention this may be,
20 it is clearly in the wrong place. When you're
21 changing a window or working weatherization issues,
22 you're not going to the gas code to look for a gas
23 code requirement. If this is needed, it needs to
24 go into a code or a standard where it's going to be
25 seen related to the work that's being done.

1 Don't support this because -- do support
2 the motion. Don't support what the Committee is
3 recommending because it just doesn't make sense
4 where it's put.

5 I agree with the proponent and support the
6 motion on the floor to accept the comment.

7 PRESIDING OFFICER: Thank you.

8 Microphone No. 2.

9 SPEAKER: Paul Cabot with the American Gas
10 Association and again in opposition for the motion
11 on the floor.

12 Some new information was brought to the
13 floor by Mr. Buuk regarding other standing
14 organizations, BPI being one of them, attempting to
15 address this same subject, and that is why the
16 National Field Code put this coverage into it --
17 into it. Other non NFPA standards, non NC standard
18 developers are beginning to address this. The
19 National Field Gas Code is the nationally
20 recognized expert on this issue, and the Committee
21 took the responsibility upon themselves to add this
22 section.

23 I agree it's a new subject for the
24 National Fuel Gas Code. Other standards and other
25 codes were referencing this section. And BPI does

1 not like this section. I understand that. That's
2 because, again, they are attempting to write their
3 own coverage, which is, if anyone took a look at
4 it, would be completely more restrictive than what
5 the National Field Gas Code is presenting here and
6 not based on the technical merits. So, again, this
7 is the right place. This is the right code.
8 Combustion air venting performance is a primary
9 function of the National Field Gas Code. This
10 section needs to address existing installation
11 where combustion air venting performance is being
12 impacted by changes to the envelope.

13 Thank you.

14 PRESIDING OFFICER: Thank you.

15 Microphone No. 5.

16 SPEAKER: I'm Larry Felker with Belimo Air
17 Controls. I'm also a member of ICC and author of
18 the book "Dampers and Airflow Control" by yellowing
19 by ASHRAE Publications. And I'm speaking in favor
20 of the motion.

21 To me, this is absurd that the triggering
22 event could be a crack in the door, the replacement
23 of a seal, the baseboard, under an exterior door.
24 There needs to be a much clearer triggering event
25 at which point you should be checking your

1 ventilation. Ventilation is critically important.
2 I think we all agree.

3 The intent of this section of the code
4 would be -- is very good. It's really written
5 poorly.

6 PRESIDING OFFICER: Thank you.

7 Is there any further discussion on
8 Motion 54-2 to reject Second Revision No. 12 and
9 any related portions of First Revision No. 68 and
10 69, thereby deleting the new section and
11 corresponding annex?

12 Mr. Crane, any further comments?

13 COMMITTEE CHAIR: No further comments.

14 PRESIDING OFFICER: Thank you.

15 Seeing none, we will move to a vote.
16 Before we vote, let me restate the motion that the
17 motion on the floor again is to reject Second
18 Revision No. 12 and any related portions of First
19 Revision No. 68 and 69, thereby deleting the new
20 section and corresponding annex.

21 If you wish to vote in favor of the motion
22 and recommended text screen one, press one.

23 If you wish to vote against the motion and
24 recommended text on screen two, press 2. Please
25 record your vote.

1 Five seconds, please. Balloting is
2 closed. Thank you.

3 The results of the vote are 187 for the
4 motion and recommended text on screen one. 53
5 against the motion and recommended text on screen
6 two. The motion has passed.

7 Is there any further discussion on
8 NFPA 54? Seeing none, we move to the next
9 document.

10 Thank you, Mr. Crane.

11 SPEAKER: Thank you, Mr. Chairman.

12 PRESIDING OFFICER: The next standard,
13 NFPA 70E appeared on our agenda. However, the
14 authorized maker of the motion has authorized NFPA
15 they no longer wish to pursue this motion.
16 Therefore, in accordance with NFPA rules,
17 Convention Rule 2.7, the motion may not be
18 considered by the assembly and is removed from the
19 agenda. Therefore, in accordance with the NFPA
20 rules Regs at 4.5.3.7 and Convention Rule 2.7, NFPA
21 70 will not be considered at this meeting, and
22 instead becomes a consent standard that will be
23 forwarded directly to the Standards Council for
24 issuance or other action.

25 We would like to thank the Committee for

1 their work on this standard. We will now move on
2 to the next standard.

3 The next report under consideration this
4 morning is that of the Committees of Health Care
5 Facilities. Here to present the committee report
6 is Correlating Committee Chair Michael Crowley of
7 the RJ Group, Incorporated, Houston, Texas.

8 The committee report, that is, the first
9 and second draft reports are locate on a document
10 information page for **NFPA 99** on the NFPA Web site.
11 The certified amending motions are contained in the
12 NFPA Technical Meeting (Tech Session) Agenda and
13 will be displayed behind me on the screen. We will
14 proceed in the order of the motion sequence number
15 presented.

16 Mr. Crowley.

17 COMMITTEE CHAIR: Mr. Chairman, ladies and
18 gentlemen, the report of all the committees for the
19 health care facilities is presented for adoption.
20 Can be found in the first draft report and second
21 draft report for the 2014 annual meeting revision
22 cycle. These reports consist of revisions NFPA 99,
23 Health Care Facilities Code, were submitted to
24 letter ballot, and the ballot results can be found
25 on the next edition tab of the document information

1 page at nfpa.org\99next.

2 The presiding officer will now proceed
3 with the certified amending motion.

4 PRESIDING OFFICER: Thank you,
5 Mr. Crowley.

6 Let's now proceed with discussion on the
7 certified amending motion on NFPA 99.

8 Microphone 5, please.

9 SPEAKER: Yes. Tim Peter here with Heery
10 International speaking on behalf of the Health Care
11 section code and standard review committee.

12 I move to accept CAM 99-1.

13 PRESIDING OFFICER: Thank you. Can you
14 restate the motion, please, that you're proposing?

15 SPEAKER: Move to accept Certified
16 Amending Motion 99-1.

17 PRESIDING OFFICER: Motion on the floor is
18 to Reject Second Revision No. 5, thereby
19 recommending the first draft text.

20 Is there a second?

21 UNKNOWN SPEAKER: Second.

22 PRESIDING OFFICER: Thank you.

23 Please proceed with discussion on the
24 motion.

25 Microphone 5.

1 SPEAKER: Yeah, we --

2 PRESIDING OFFICER: I'm sorry. Can you
3 reintroduce yourself?

4 SPEAKER: Sorry. Tim Peter Heery
5 International speaking on behalf of the Health Care
6 section code and Standards and Review Committee.

7 This issue is kind of a minor issue, but
8 it's something we felt we at least had to bring to
9 the floor. We don't disagree with what the
10 Committee is doing, but we feel that the way they
11 worded it is an issue. Right now, the way it's
12 worded, it will indicate that all appliances need
13 to be double insulated and grounded. But we think
14 the intent of the Committee was double insulated
15 appliances and grounded appliances were
16 permissible. So we just think the language needs
17 to be cleaned up.

18 PRESIDING OFFICER: Thank you.

19 Mr. Crowley, would you like to offer the
20 Committee's position?

21 COMMITTEE CHAIR: Yes, Mr. Chair.

22 The Committee processed Public Comment
23 No. 57 in the second revision. In fact, the intent
24 of that revision was to add the word grounded to
25 allow the means of addressing the issue. The

1 Committee vote was 13, 0. And as the chair of the
2 Correlating Committee, this change either way does
3 not have a correlation issue.

4 PRESIDING OFFICER: Thank you,
5 Mr. Crowley.

6 With that, we will open up debate on the
7 motion. Please provide your name, affiliation,
8 whether you're speaking in support or against the
9 motion.

10 Microphone 5, please.

11 SPEAKER: My name is Dave Dezney. I'm
12 representing the health care section, speaking in
13 favor of the motion.

14 Yesterday, at the Health Care Section
15 meeting, the Health Care Section voted to support
16 this motion. Although the Health Care Section
17 understands what the intention of the Committee was
18 is to allow two options for grounding within the
19 patient care facility. The verbiage that the
20 Committee provided does not give clarity to that at
21 all. In fact, it confuses the motion. It implies
22 that it has to be double insulated and grounded.

23 So because of that, we think that this
24 motion will cause confusion to the industry; so
25 we're recommending that you move forward with the

1 motion, and really all we're doing is eliminating
2 confusion by doing that.

3 Thank you.

4 PRESIDING OFFICER: Thank you.

5 Is there any further discussion on
6 Motion 99-1 to reject second revision five, thereby
7 recommending first draft text.

8 Microphone No. 3.

9 SPEAKER: Ken Dunkin, Performance Design
10 Technologies. I think what we really needed to
11 hear was double insulated or grounded, not and
12 grounded. And so I don't know if there's a way we
13 can make that editorial change, but if we can't
14 make that editorial change, then I would suggest
15 that we vote for the motion and not require them to
16 be both. That definitely does say that they have
17 to be double insulated and grounded, and that's
18 wrong.

19 PRESIDING OFFICER: Can you please state
20 for the record, are you speaking for?

21 SPEAKER: I'm speaking for the motion.

22 PRESIDING OFFICER: Okay. Thank you.

23 Any further discussion?

24 Mr. Crowley, any final comments?

25 SPEAKER: I think the Committee did

1 intend that grounded was already listed elsewhere
2 in the standard in referenced documents and that
3 this was additional information. But I think
4 Mr. Dunkin is right. I'm not sure we can make that
5 "or" insertion right now.

6 PRESIDING OFFICER: Further discussion?
7 Seeing none, let's move on to the vote.

8 Before we vote, let me restate the motion.
9 The motion on the floor is to reject Second
10 Revision No. 5, thereby recommending first draft
11 text.

12 If you wish to vote in favor of the motion
13 recommended text on screen one, press one.

14 If you wish to vote against the motion on
15 recommended text on screen two, press two. I need
16 you to record your vote.

17 Five seconds. The balloting is now
18 closed.

19 Thank you. Results of the votes are 197
20 for the motion and recommended text on screen one.

21 29 against the motion and recommended text
22 on screen two. The motion has passed.

23 Is there any further discussion on
24 NFPA 99? Seeing none, we move to the next
25 document.

1 Thank you, Mr. Crowley.

2 The next report under consideration this
3 morning is out of Technical Committee on Structures
4 Construction and Materials. Here to present the
5 committee report is committee member Joseph
6 Versteeg of Joseph Versteeg Associates, Torrington,
7 Connecticut.

8 The committee report that is the first and
9 second draft reports are located on the document
10 information page for **NFPA 703** on the NFPA Web site.
11 The certified amending motions are contained in the
12 NFPA Technical Meeting (Tech Session) Agenda and
13 will be displayed behind me on the screen.

14 We will proceed in the order of the motion
15 sequence number presented.

16 Mr. Versteeg.

17 COMMITTEE CHAIRMAN: Good morning,
18 Mr. Chairman, ladies and gentlemen.

19 The report of the Technical Committee on
20 Structures, Construction and Materials is presented
21 for adoption and can be found in the first draft
22 report and in the second draft report for the 2014
23 annual meeting revision cycle.

24 The Technical Committee has published a
25 report consisting of revisions to NFPA 703, the

1 Standard for Fire Retardant-Treated Wood and
2 Fire-Retardant Coatings for Building Materials.

3 This report was submitted for letter
4 ballot to the Technical Committee, which consists
5 of 18 voting members. The report and ballot
6 results can be found on the next edition tab of the
7 document information page at nfpa.org/703next.

8 The presiding officer will now proceed
9 with the certified amending motion.

10 PRESIDING OFFICER: Thank you,
11 Mr. Versteeg. Let's now proceed with discussion on
12 Certified Amended Motion NFPA 703.

13 Microphone No. 5, please.

14 SPEAKER: Marcelo Hirschler, GBH
15 International speaking for NFPA. And I move to
16 reject an identifiable part of Second Revision
17 No. 2 and any related portions of First Revision
18 edition No. 3, thereby deleting new sections
19 4.1.1.1, and 4.1.1.7.

20 PRESIDING OFFICER: Thank you.

21 I would like to point out that, if motion
22 703-1 passes, motion 703-2 shall not be entered as
23 it seeks to impart complete the same action, namely
24 the deletion of Section 4.1.1.1.

25 The motion on floor is to reject an

1 identifiable part of Second Revision No. 2 and any
2 related part of First Revision No. 3, thereby
3 releasing the section as described. Those are,
4 again, 4.1.1, 4.1.1.6, 4.1.1.7. Let me make sure I
5 state the first one, 4.1.1.1. Get all the ones;
6 right? The identifiable part of the text that's
7 shown.

8 Do we have a second?

9 UNKNOWN SPEAKER: Second.

10 PRESIDING OFFICER: Thank you.

11 Please proceed with the discussion on the
12 motion.

13 Microphone No. 5.

14 SPEAKER: Marcelo Hirschler, GBH
15 International for NAFRA in support of the motion.

16 There's three major issues here. Item 6
17 is a proprietary issue because you will notice in
18 the charging paragraph, the fire retardant-treated
19 wood is a wood product impregnated with chemical by
20 a pressure process or other means.

21 Then we go to item 6, and it says if it's
22 made by other means, it ceases to be fire-retardant
23 treated wood. It goes and becomes something else,
24 which is, in effect, a coated wood product. That
25 is a proprietary issue. That means a manufacturer

1 of the fire-retardant treated wood made by pressure
2 to get an advantage of manufacture making
3 fire-retardant treating wood impregnated by other
4 means. This is what has been debated here at the
5 last cycle, have been debated at the IBC multiple
6 times; and it was clear that it is not the code or
7 the standard in this case who determines what means
8 there (inaudible) as long as the product is
9 impregnated.

10 Item 2 on this page -- Item 1, 4.1.1.1 it
11 says that, if it's treated by other means, it shall
12 be considered a fire-retardant coating and shall
13 meet the requirements of coating in Chapter 5.

14 That's great. I have no problem with the
15 fact that, if it's coated, it should be treated as
16 coated. But unfortunately, no changes were made to
17 Chapter 5. So it's impossible to get to here
18 because Chapter 5 doesn't say it is here. So this
19 is a section that is meaningless because it doesn't
20 get you there. There is no way to get to that
21 section.

22 And item 3, item 6 says that all product
23 that has no fire-retardant treated wood impregnated
24 wood made by pressure treatment must be tested on
25 all six sides, irrespective of how you intend to

1 use it. If you just put (inaudible) on wood, you
2 still have to test the ages of the product. You
3 still have to test the back of the product. We
4 never do that. We always test the exposed side.

5 There are other problems. Those three
6 should give you the basic information. Please
7 support my motion.

8 Thank you.

9 PRESIDING OFFICER: Thank you.

10 Mr. Versteeg, would you like to offer the
11 Committee's position?

12 UNKNOWN SPEAKER: Yes. Thank you,
13 Mr. Chair.

14 During the first draft, the Technical
15 Committee revised and relocated the requirements
16 for fire-retardant treated wood previously within
17 Chapter 3 to a new section, Section 4.1.1. The
18 revision, SR 3, passed with a vote of 13
19 affirmative and 3 negative during.

20 During the second draft, the Technical
21 Committee revised Section 4.1.1 by adding
22 Section 4.1.1.1 to address the fire-retardant
23 coated materials. The second revision, SR No. 2,
24 passed with a vote of 12 affirmative and only 1
25 negative.

1 Thank you.

2 PRESIDING OFFICER: Thank you,
3 Mr. Versteeg.

4 With that, we will open up debate on the
5 motion. Please provide your name, affiliation,
6 whether you're speaking in support or against the
7 motion.

8 Microphone No. 6, please.

9 SPEAKER: John Holland, Hoover Treated
10 Wood Products.

11 PRESIDING OFFICER: Vote for or against?

12 SPEAKER: We speak against the motion.

13 PRESIDING OFFICER: Thank you.

14 UNKNOWN SPEAKER: As Mr. Versteeg said,
15 the Committee voted on this and felt it was a
16 change that was required in the code in order to
17 clarify what Section 4.1.1 was trying to say. The
18 previous speaker gave us some information that is
19 not entirely correct. So we hope that you would
20 take a look at the language that is being proposed.

21 And I'm sure those of you who are in the
22 inspection part of building, understand what is
23 trying to be said here. What we have are materials
24 that are being painted, and they are trying to say
25 that they meet the requirements of 703 or

1 fire-retardant treated wood, when in reality, they
2 do not.

3 Part of what the previous speaker said, he
4 mentioned "other means" and conveniently left off
5 other means during manufacture.

6 Paints that are applied by a third-party.
7 After the manufacture of the product, does not meet
8 that definition. That's what this is trying to say
9 is that, if you apply it after manufacture, then
10 you have a coated product. You do not have
11 fire-retardant treated wood.

12 And as for having to test the edge, that's
13 not what 4.1.1.1.6 says. It says "all sides." It
14 doesn't say the edges. It also allows structural
15 wood panels -- OSB, plywood -- only have to test
16 the front and back faces. So recognize that, in
17 every case, you will not need to treat -- or I
18 should say you will not need to test all of the
19 edges of all sides of material.

20 We urge you to support the Committee's
21 action. Again, vote against the motion, which
22 would mean that you would be supporting No. 2.

23 Thank you.

24 PRESIDING OFFICER: Thank you.

25 Microphone 5.

1 SPEAKER: Marcelo Hirschler, GBH
2 International for NAFRA, in support of the motion.
3 I would like the audience to look at the
4 screen No. 1 at the stricken 4.1.1.6 for wood
5 product produced by other means during manufacture
6 other than a pressure process. "Other means during
7 manufacture, that's what I say. Those products are
8 produced by impregnation by other means during
9 manufacture are treated differently of those
10 products that are produced by a pressure treatment.
11 That is not something that we should do. That's
12 something we've been debating.

13 We had the same debate at the last cycle
14 year. We've had the same debate at the IBC. It's
15 not in the codes or standards to tell us how to
16 make the product. Absolutely, there needs to be
17 distinction between coated and treated product.
18 Not in debate here. I'm absolutely in favor of
19 that.

20 703 has a Chapter 4 on fire-retardant
21 treated wood, Chapter 5 on fire-retardant coated
22 wood. The entire change that was made at this
23 cycle makes no changes to Chapter 5. So making
24 changes to Chapter 4 sending something that is a
25 treated product because it's impregnated by other

1 means. Sending it to Chapter 5, you can't get
2 there if you know it's a coated product.

3 With regards to the other point made by
4 Mr. Hoover -- excuse me -- Mr. Holland -- I
5 apologize -- he says all sides don't mean all six
6 sides.

7 Well, if I have a product that is of any
8 shape, all sides means all sides. It does not mean
9 the front and the back. All sides, means all
10 sides. We never test all sides. Please support my
11 motion.

12 Thank you.

13 PRESIDING OFFICER: Thank you.

14 Microphone 6.

15 SPEAKER: John Holland Hoover Wood
16 Products. I would --

17 PRESIDING OFFICER: Vote for or against,
18 please?

19 SPEAKER: Again, we're here against the
20 motion.

21 PRESIDING OFFICER: Thank you.

22 SPEAKER: 4.1.1 is very clear that, if
23 somebody has coated a product and they're looking
24 in the fire-retardant treated section of the code
25 and they're trying to figure out what they need to

1 do, it specifically says that, if you coated the
2 product, you're in the wrong section. You need to
3 go to Chapter 5. That's a very clear. Again, it
4 doesn't say anything about the ends of the wood.
5 It says "all sides." So that's a red herring.

6 We urge you to support the Committee and
7 vote against the motion.

8 Thank you.

9 PRESIDING OFFICER: Thank you.

10 Is there any further discussion on
11 Motion 703-1 to reject an identifiable part of
12 Second Revisions No. 2 and related portions of
13 First Revision No. 3, thereby deleting new sections
14 4.1.1.1, 4.1.1.6, and 4.1.1.7.

15 Mr. Versteeg, final thoughts?

16 COMMITTEE CHAIR: I have none. Thank you,
17 Mr. Chairman.

18 PRESIDING OFFICER: All right. Thank you.
19 We can move on to a vote.

20 Before we do that, let me restate the
21 motion.

22 The motion on the floor is to reject an
23 identifiable of Second Revision No. 2 and any
24 related portions of Partial Revision No. 3, thereby
25 deleting new Sections 4.1.1.1, 4.1.1.6, and

1 4.1.1.7.

2 If you wish to vote in favor of the motion
3 and recommended text of screen one, press one.

4 If you wish to vote against the motion and
5 recommended text on screen two, press two. Please
6 record your votes.

7 Balloting will be closed in five seconds.
8 Balloting is closed.

9 The results of the votes are 72 for the
10 motion and recommended text on screen one, 147
11 against the motion and recommended text on
12 screen two. The motion has failed.

13 Now proceed with discussion on Certified
14 Amending Motion 73-2.

15 Microphone 5, please.

16 SPEAKER: Marcelo Hirschler, GBH
17 International for NAFRA, and I move to reject
18 probable part -- reject whatever come to -- reject
19 an identifiable part of second revision No. 2
20 thereby recommending First Draft text.
21 Identifiable part is as shown.

22 PRESIDING OFFICER: Thank you.

23 There's a motion on the floor to reject
24 identifiable part of Second Revision No. 2, thereby
25 recommending the first draft text. Identifiable

1 part is the text as shown.

2 Is there a second?

3 UNKNOWN SPEAKER: Second.

4 PRESIDING OFFICER: We do have a second.

5 Please proceed with the discussion on the
6 motion.

7 Microphone 5.

8 SPEAKER: Marcelo Hirschler, GBH
9 Internation, NAFRA, speaking in favor of the
10 motion.

11 Let me point out to you that this is doing
12 something that is impossible to address. I have no
13 problem with the fact that materials don't meet the
14 FRTW requirements are coated fine. But you're
15 sending them to Chapter 5, but you're not telling
16 anyone from Chapter 5 (inaudible). So it's
17 impossible to get here.

18 Thank you.

19 PRESIDING OFFICER: Thank you.

20 Mr. Versteeg, would you like to offer the
21 Committee's position?

22 COMMITTEE CHAIR: Yes, I would.

23 Briefly, as before in 703-1, during the
24 first draft, the Committee simply revised and
25 relocated the requirements for fire-retardant

1 treated wood, previously in Chapter 3, to a new
2 section in Chapter -- in Section 4.1.1.

3 During the second draft, some revisions
4 were made by adding Section 4.1.1.1 to address
5 fire-retardant treated coatings.

6 Thank you.

7 PRESIDING OFFICER: Thank you,
8 Mr. Versteeg.

9 With that, we will open up debate on the
10 motion. Please provide your name and affiliation
11 when you're speaking in support or against the
12 motion.

13 Microphone 6, please.

14 SPEAKER: Bill Holland, Hoover Treated
15 Wood Products. Again, speaking against the motion.

16 What I find curious is that, in the 703-1,
17 he had a problem with 4.1.1.6 and 4.1.1.7. Now he
18 no longer has that problem. That doesn't make any
19 sense to me. And again, you know, I'm not going to
20 waste your time. If you have a coated product and
21 you're looking in the fire-retardant treated wood
22 section, it's going to tell you that you need to be
23 in Chapter 5.

24 So, again, we would urge your vote against
25 the motion and support the committee.

1 Thank you.

2 PRESIDING OFFICER: Thank you.

3 Microphone 5.

4 SPEAKER: Marcelo Hirschler, GBH
5 International, speaking for NAFRA, in favor of the
6 motion.

7 Mr. Hollands is trying to put words in my
8 mouth, which I think I can put enough words in my
9 mouth on my own. You've heard that over the years.

10 This particular motion is a subset of the
11 previous motion in case the previous motion fails
12 as it did. At least it does one of the things. It
13 avoids something that's impossible to do which is
14 can you take -- send you to somewhere where you
15 can't come back.

16 Please support the motion.

17 PRESIDING OFFICER: Thank you.

18 Is there any further discussion on Motion
19 703-2 to reject an identifiable part of Second
20 Revision No. 2, thereby recommending First Draft
21 Text?

22 Seeing none. Mr. Versteeg, final
23 thoughts?

24 COMMITTEE CHAIR: I have none. Thank you,
25 Mr. Chairman.

1 PRESIDING OFFICER: Thank you. We will
2 move to a vote.

3 Before we vote, let me restate the motion.

4 The motion on the floor is to reject an
5 identifiable part of Second Revision No. 2, thereby
6 recommending first draft text.

7 If you wish to vote in favor of the motion
8 and recommended text on screen one, press one.

9 If you wish to vote against the motion and
10 recommended text on screen number two, press two.
11 Please record your vote.

12 The balloting will close in five seconds.
13 The balloting is closed. Thank you.

14 The results of the vote are 74 for the
15 motion and recommended text on screen number one.
16 132 against the motion and recommended text on
17 screen two. The motion has failed.

18 Let's now proceed with discussion on
19 Certified Amending Motion 703-3.

20 Microphone 5, please.

21 SPEAKER: Marcelo Hirschler, GBH
22 International for NAFRA. I move to accept
23 identifiable part of Public Comment No. 4. The
24 identifiable part is the text as shown.

25 PRESIDING OFFICER: Thank you.

1 There is a motion on the floor to accept
2 identifiable part of Public Comment No. 4. The
3 identifiable part as the text as shown.

4 Is there a second?

5 UNKNOWN SPEAKER: Second.

6 PRESIDING OFFICER: We do have a second.
7 Thank you.

8 Please proceed with the discussion on the
9 motion.

10 SPEAKER: Marcelo Hirschler, GBH
11 International, speaking for NAFRA in support of the
12 motion.

13 The key thing here is that ASTM Committee
14 E5 developed a standard for ASTM E2768, which is
15 the exact same thing as ASTM E84, which we had it
16 20 minutes for a total of 30 minutes, which
17 requires all the same requirements. That standard
18 is now included in at least one location In
19 NFPA 101 and also 5000 and also in the
20 International Wildland-Urban Interface Code. It's
21 an alternate way of approaching the same thing.

22 We've been for years debating this long
23 list of things what needs to be approved. It is
24 unnecessary. You will hear that there is a
25 difference between significant progressive

1 combustion and a flame progress of 10 1/2 feet.
2 That is a red herring, using in Mr. Holland's
3 words, because no lab has tested significant
4 progressive combustion in any way other than the
5 progress of flame spread for at least 20 years.
6 They will be talking to you about ASTM E69, the
7 fire tube. So one runs the fire tube. It's not a
8 requirement. The only requirement of the code and
9 NFPA 703 and in the IBC is that you shall run the
10 ASTM E84 for an extended period of time.

11 So both the significant progressive
12 combustion issue and the ASTM E69 apply to a red
13 herrings. ASTM E2768 was developed -- ASTM E85, in
14 fact, was developed by Dr. White recently deceased
15 last two years ago, with the expressed purpose of
16 including it into codes and standards.

17 Please support the motion. Thank you.

18 PRESIDING OFFICER: Thank you.

19 Mr. Versteeg, would you like to offer the
20 Committee's position?

21 COMMITTEE CHAIR: Yes. Thank you,
22 Mr. Chairman.

23 It was in a statement, in response to this
24 input, that ASTM E2768 states that meeting the 10.5
25 flame foot -- flame advancement criteria represents

1 no progression combustion. In addition, the
2 consensus was that flame spread and progressive
3 combustion are not equivalent.

4 Thank you.

5 PRESIDING OFFICER: Thank you,
6 Mr. Pristine. With that, we will open up debate on
7 the motion period. Please provide your name and
8 affiliation, whether you're speaking in support
9 against or against the motion.

10 Microphone 6, please.

11 SPEAKER: Dave Bouchet, Hoover Treated
12 Wood Products, and I'm speaking against the motion.
13 I wanted to provide information with regard to
14 ASTM 2768. It is referenced in the Appendix of
15 NFPA 1144 for a means -- another means of testing
16 ignition resistant materials, which are defined
17 within 1144 as having a very similar performance
18 criteria to fire-retardant treated wood.

19 It is also specified as a means of testing
20 ignition resistant materials in the International
21 Wildland-Urban Interface Code. So there is a
22 specific class of materials. A new class of
23 materials specifically for the Wildland-Urban
24 Interface referred to as ignition resistant
25 materials. So it's not appropriate for

1 fire-retardant treated wood, and we would urge you
2 to vote against this motion.

3 Thank you.

4 PRESIDING OFFICER: Thank you.

5 Microphone 6, please.

6 SPEAKER: Joe Holland, Hoover Treated Wood
7 Products. A couple of things --

8 PRESIDING OFFICER: For or against?

9 SPEAKER: We are against the motion.

10 PRESIDING OFFICER: Thank you.

11 SPEAKER: The speaker -- or the presenter
12 of the motion, again, has conveniently left out
13 part of what this is doing. Again, he's still
14 trying to eliminate that Section 4.1.1.1 that says,
15 if it's not produced by -- you know, if you have a
16 coating, then you need to be in Chapter 5. Again,
17 he wants to eliminate that. He conveniently didn't
18 talk about that.

19 You heard the previous speaker,
20 Mr. Bouchet, talk about 2768; and you also heard
21 the Committee's position on 2768. So we're not
22 going to get into any details about that. I
23 believe you have enough information.

24 Again, we urge you to vote against the
25 motion and support the committee.

1 Thank you.

2 PRESIDING OFFICER: Thank you.

3 Microphone 5.

4 SPEAKER: Marcelo Hirschler, GBH
5 International, speaking for NFPA in favor of the
6 motion.

7 Just wanted to point out that the opponent
8 conveniently forgot to mention 2768 is included in
9 section -- Chapter 10 of the NFPA 101, is included
10 in Chapter 10 of NFPA 5000, is included
11 International Wildland-Urban Interface Code.

12 Thank you.

13 PRESIDING OFFICER: Thank you.

14 Microphone 6, please.

15 SPEAKER: Bill Holland, Hoover Treated
16 Wood Products. Again, speaking against the motion.

17 Chapter 10 and 101 is interior finish.
18 It's not fire-retardant treated wood. Don't be
19 confused.

20 Please support the committee, and vote
21 against the motion.

22 Thank you.

23 PRESIDING OFFICER: Is there any further
24 discussion on Motion 703-3 to accept an
25 identifiable part of Public Comment No. 4?

1 Mr. Versteeg, final thoughts?

2 COMMITTEE CHAIR: I have none,
3 Mr. Chairman.

4 PRESIDING OFFICER: All right. Thank you.
5 Seeing no one at the mic, we will proceed on a
6 vote. Before we vote, let me restate the motion.

7 The motion on the floor is to accept an
8 identifiable part of Public Comment No. 4. If you
9 wish to vote in favor of the motion and recommended
10 text on screen number one, press one. If you wish
11 to vote against the motion and recommended text on
12 screen number two, press two. Please report your
13 vote.

14 The balloting will close in five
15 minutes -- five seconds. Sorry. The balloting is
16 closed.

17 The results of the vote are 65 for the
18 motion and recommended text on screen one, and 162
19 against the motion and recommended text on screen
20 two. The motion has failed.

21 Thank you, Mr. Versteeg.

22 COMMITTEE CHAIR: Thank you, Mr. Chairman.

23 PRESIDING OFFICER: Before we begin the
24 next document, I will be introducing Mr. Richard
25 Owen here, member of the Standards Council.

1 However, before we do that, we will take a
2 ten-minute break. So that's ten minutes, not the
3 ten seconds thing I just confused. A ten-minute
4 break, please.

5 (Recess taken.)

6 PRESIDING OFFICER: A couple of
7 announcements first before we get into 101.

8 First of all, there's been some concern
9 expressed to NFPA staff about the voting, about the
10 voting machines that you have. They have checked
11 these things, and the number seemed to be good. So
12 you are getting counted.

13 A couple of provisos. First of all, the
14 only time that will actually register is after I
15 say it's time to vote. If you decide halfway
16 through the arguments how you're going to vote and
17 push the vote, it does not register. So wait until
18 the actual voting time before you push the button.

19 Also, too, occasionally, you'll get a red
20 light rather than a green light. If you happen to
21 get the red light on your device, just push it
22 again. If you push it 50 times, it will still only
23 register as one vote.

24 So, second of all, I'd like to remind all
25 Technical Committee members to please complete the

1 brief survey provided to you at registration, if
2 you've not already done so. Copies of surveys are
3 available in the back of the room if you have
4 misplaced or not seen one previously. If you leave
5 the session today, you may return your survey at
6 the electronic device table.

7 Thank you for your assistance and we're
8 continuously striving to improve the NFPA's
9 standards development process.

10 The next report under consideration this
11 morning is that of Committee on Safety to Life.
12 Here to present the Committee's report is Committee
13 Chair William Koffel of Koffel Associates
14 Incorporated, Columbia, Maryland.

15 The committee reports, that is, the first
16 and second reports, are located on the document
17 information page for **NFPA 101** on the NFPA Web site.
18 The certified amending motions are contained in the
19 NFPA Technical Meeting (Tech Session) Agenda, and
20 it will displayed behind me on the screen. We will
21 proceed in order of the motion sequence number
22 presented.

23 Mr. Koffel.

24 COMMITTEE CHAIR: Thank you. Mr. Chair,
25 ladies and gentlemen, the report of our Committee

1 for the Safety of Life is presented for adoption
2 and can be found in the first draft report and
3 second draft report for the 2014 annual meeting
4 revision cycle. These reports consist of revisions
5 NFPA 101 Life Safety Code were submitted to letter
6 ballot. The ballot results can be found on the
7 next edition tab of document information page at
8 www.nfpa.org\101 next.

9 The presiding officer will now proceed
10 with the certified amending motions.

11 PRESIDING OFFICER: Thank you, Mr. Koffel.
12 Let's now proceed with the discussions on Certified
13 Amending Motion NFPA 101.

14 Microphone 5, please.

15 SPEAKER: Dave Frable representing the US
16 General Services Administration. I'll be moving
17 Motion 101-1 to reject an identifiable part of
18 Second Correlating Revision No. 4, thereby
19 recommending support for the first draft text.

20 PRESIDING OFFICER: The motion on the
21 floor is to reject an identifiable part of Second
22 Correlating Revision No. 4, thereby recommending
23 first draft text. The identifiable part is the
24 text as shown.

25 Do we have a second?

1 UNKNOWN SPEAKER: Second.

2 PRESIDING OFFICER: We have a second.
3 Please proceed.

4 SPEAKER: Dave Frable, US General Services
5 Administration, I will be speaking in support of
6 Motion 101.

7 First, I would like to provide you with
8 some background information. During the first
9 draft meeting, the Technical Committee revised the
10 outcome of the factor for general business use from
11 a hundred square feet per person to 150 square feet
12 per person. In addition, the Committee also
13 created a outcome of the factor for 50 square feet
14 per person for concentrated business use.

15 The rationale for increasing the occupant
16 load factors for general business use was based on
17 several research studies that have concluded that a
18 hundred square foot per person occupant factor for
19 general business use was very conservative, which
20 is related to office buildings in general, to have
21 an additional egress capacity and greater number
22 access to combat the overestimated building
23 population.

24 It should be noted that the current
25 occupant load factor of a hundred square feet per

1 person first appeared in the 1934 building exit
2 code. At the time, the occupant load factor of a
3 hundred square feet per person was specified for
4 office, factory, and workrooms.

5 However, over the years, several other
6 research studies have been conducted to determine
7 occupancy load factors for various occupancies.
8 One common similarity of each of those studies was
9 that all subsequent studies have concluded that the
10 hundred square foot per person occupancy load for
11 general business use is conservative.

12 Studies conducted between 1996 and 1990 --
13 1992 have indicated occupancy load factors in
14 general business use range from 150 square feet per
15 person up to 278 square feet per person.

16 Recently, in an effort to provide a more
17 update look at this issue, a project in 2012 was
18 undertaken by NFPA Fire Protection Research
19 Foundation to study the appropriateness of a
20 hundred square feet per person for business
21 occupancy use. Two studies were conducted. One by
22 WPI in Boston and another by the University of
23 Canterbury -- Cantabria in Spain.

24 It is our opinion that both these recent
25 studies concluded it would be reasonable to

1 increase the value of the existing occupancy to 150
2 square feet.

3 It should be pointed out that no public
4 comments were submitted in advance of the second
5 draft. However, during the second draft, the
6 technical committee reversed their position to
7 revise the occupant load factor for general
8 business use back to a hundred square feet per
9 person. The Technical Committee came to the
10 conclusion that all recent studies were
11 inconclusive. However, they state -- still
12 maintain that concentrated business use of
13 unoccupied load factor of 50.

14 6 out 25 technical committee members
15 voted, including the chair of the committee.
16 Please understand that the role of the chair today,
17 during these proceedings, is to defend the position
18 of the Technical Committee and not his personal
19 opinion.

20 It is worth noting that the WPI study also
21 concluded that the occupant load factor 150 square
22 feet per person is justified. In conclusion, we
23 believe that all the studies have concluded it
24 would be reasonable to increase the occupant load
25 factor from 100 to 150 square feet per person for

1 general business use.

2 PRESIDING OFFICER: Please wind up your
3 remarks, sir.

4 SPEAKER: Therefore, we encourage the NFPA
5 membership to accept Motion 101-1.

6 Thank you.

7 PRESIDING OFFICER: Thank you.

8 Mr. Koffel.

9 COMMITTEE CHAIR: Thank you, Mr. Chair.

10 During the first draft revision,
11 responsible Technical Committee made a change that
12 appeared in Chapters 38 and 39 relative to the
13 occupant load factor; and the Correlating Committee
14 took action to move that change into Chapter 7 into
15 the tables, since that's where those provisions
16 should rest. And while they're in Chapter 7, we
17 recognize that the expertise rests with the
18 Mercantile and Business Occupancies Committee, and
19 at this time, I would ask that you recognize the
20 chair of the Technical Committee on Mercantile and
21 Business Occupancies, Mr. Ken Bush on Mic 2, to
22 address the issue.

23 PRESIDING OFFICER: Microphone 2, go
24 ahead.

25 SPEAKER: Thank you, Mr. Chair.

1 My name is Ken Bush. I'm here to speak
2 against the motion as the chair of the NFPA 101
3 Technical Committee on Mercantile and Business
4 Occupancies.

5 The 150 square foot occupant load factor
6 presented in the first draft was based upon
7 information and studies that were later viewed as
8 the outdated and limited in scope and digital
9 collection sources that were also outdated. These
10 studies provided inconclusive results. Following
11 the review of later studies, including the one
12 referenced that was approved by the -- or
13 supervised by the NFPA Research Foundation,
14 Technical Committee noted that the actual occupancy
15 load factor of business occupancies more closely
16 resembled the 100 square foot per person figure.
17 There was repeated as part of the second draft
18 under the Code.

19 The value of 100 square foot per person
20 has been used in the Code for many years and have
21 been verified by the latest available data that was
22 reviewed by the committee. The original data did
23 not support a change to a less dense occupant load
24 for common business use areas. And annex load have
25 been developed by the Committee to further address

1 the value on conscious business use for occupancy
2 loads. In addition, the Technical Committee
3 reviewed a variety of building usage that were
4 considered as business occupancies. Such may
5 include certain types of educational uses, public
6 areas which may be subject to more concentrated yet
7 variable occupant load and weighing areas and other
8 public spaces such as are post offices and other
9 government buildings and public services such as
10 barbara shops and beauty salons. The occupant load
11 of these spaces could readily be subject to a more
12 concentrated condition than recognized for business
13 office spaces.

14 Thank you.

15 PRESIDING OFFICER: Thank you, gentlemen.

16 With that, we'll open up the debate.

17 Please provide your name and affiliation and
18 whether you're speaking in support of or against
19 the motion.

20 Microphone 5.

21 SPEAKER: Dave Frable, US General Service
22 Administration.

23 Based on the two reports, one from WPI and
24 the other, Canterbury, University of Cantabria,
25 Spain --

1 PRESIDING OFFICER: I'm sorry, Mr. Frable.
2 Would you say for or against?

3 SPEAKER: Dave Fable, GSA, in support of
4 the motion.

5 Both studies, like I've stated previously
6 in the concluding remarks, state that the occupant
7 load factor for a hundred -- revising it to 150
8 square foot per person for general business use was
9 reasonable. It also concluded that for
10 concentrated use, the current hundred square foot
11 per person occupant load factor is more -- is
12 justified for concentrated use.

13 The 50 square foot per person that the
14 committee basically came up with, was not based on,
15 to my knowledge, based on any research data. The
16 hundred square foot -- 150 square foot per person,
17 as I've stated previously, has been justified and
18 substantiated throughout numerous studies over the
19 years.

20 I urge the membership to support Motion
21 101-1 on this issue. Thank you.

22 PRESIDING OFFICER: Is there any further
23 discussion?

24 Microphone No. 5.

25 SPEAKER: Hi. Josh Oliver. I'm

1 representing myself and speaking in favor of the
2 motion. I'm just going to paraphrase something
3 from the Committee's vote to change it to -- from
4 back from 150 to 100. It says common business use
5 areas and business occupancies have shown the
6 report data indicates the actual occupant load most
7 closely resembles 100-square foot per person.
8 That's what Mr. Bush had indicated that the report
9 that we're referencing -- that's the "Contogry"
10 indicates 100. If you read from the "Contogry"
11 report, which is the most-recent report, it says
12 otherwise. It says the values indicate that for
13 less concentrated areas, the 9.33-meter square foot
14 person -- the 9.33-meter square foot per person
15 converts to 100 -- feet per person is a
16 conservative value for the occupant load. So it's
17 actually saying opposite of what I just heard the
18 Committee say. So I'm hearing you conflict on what
19 the report says and what the Committee has said; so
20 I think we need some clarification there.

21 And it goes further to say, however, for
22 concentrated area, the occupant load is close to
23 the NFPA value. However, it's a little higher.
24 And I find that ironic. The report actually
25 substantiating that a concentrated use is closer to

1 the 100, though I recognize there are many areas
2 where it's less than 100.

3 So I'm having a challenge -- I'm having
4 difficulties dissecting what the Committee is
5 saying this is what the report says.

6 Thank you.

7 PRESIDING OFFICER: Thank you. Is there
8 any further discussion on Motion 101-1?

9 Microphone 5.

10 SPEAKER: Josh Allen, I'm representing
11 myself. Just another anecdotal --

12 PRESIDING OFFICER: And you are speaking
13 in favor or speaking --

14 SPEAKER: I'm speaking in favor of the
15 motion. Thank you.

16 Just one more anecdotal information. The
17 Correlating Committee, as Mr. Koffel has indicated,
18 this falls under the jurisdiction -- this is
19 Mercantile, which it should.

20 But I think this body needs to know that
21 this proposal, initially during first draft, was
22 submitted to Means of Egress. And Means of Egress
23 did actually act on this, and their action, which
24 of course, has been superceded by the action we're
25 discussing. But for information only, the Means of

1 Egress Committee did actually accept this at first
2 revision to 150 and left -- for the concentrated
3 use, they left 100.

4 Thank you.

5 PRESIDING OFFICER: Thank you.

6 Any further discussion on Motion 101-1?
7 This is to reject identifiable part of Second
8 Correlating Revision No. 4, thereby recommending
9 the first draft text.

10 Mr. Koffel, any final words?

11 COMMITTEE CHAIR: Nothing further.

12 PRESIDING OFFICER: All right. Thank you,
13 Mr. Chair.

14 Again, before we vote, let me restate the
15 motion.

16 The motion on the floor is to reject an
17 identifiable part of Second Correlating Revision
18 No. 4, thereby recommending first draft text. If
19 you wish to vote in favor of the motion and
20 recommended text on screen one, press one.

21 If you wish to vote against the motion and
22 recommend the text on screen two, press two. Now,
23 please record your votes at this time.

24 Five seconds. Balloting is closed. The
25 results of the vote are 89 in favor, 160 against.

1 The motion fails.

2 Let's now proceed with the discussion on
3 Certified Amending Motion 101-2.

4 Microphone 5, please.

5 SPEAKER: Dave Frable representing US
6 General Frable Administration. I will be moving
7 Motion 101-2 to reject the Second Revision No. 20
8 and any related portions and corresponding annex
9 and references including Second Revisions No. 22,
10 23, and 24.

11 PRESIDING OFFICER: Thank you. There is a
12 group amending motion on the floor to reject Second
13 Revision No. 20 and any related portions of first
14 revisions, reject Second Revisions No. 22, No. 24,
15 and No. 23, thereby deleting the new section,
16 corresponding annex, and references.

17 Is there a second?

18 UNKNOWN SPEAKER: Second.

19 PRESIDING OFFICER: I hear a second.
20 Please proceed with your discussion.

21 SPEAKER: Dave Frable representing US
22 General Services Administration. I'll be speaking
23 in support of Motion 101-2. A little background
24 information.

25 First draft meeting of public input was

1 submitted to the Technical Committee on Means of
2 Egress and proposed that a new text in Chapter 7
3 require all new high-rises having an occupant load
4 4,000 and one Hernandez installed approve occupant
5 monitoring of video equipment and exit stairs in
6 integrals not exceeding five stories.

7 The intent of the proposal states, as a
8 potential to have fire service and building
9 management at the emergency command center to
10 observe and manage real time data and occupants'
11 egress via the exit stairs.

12 Technical Committee Means on Egress
13 rejected the proposal for a number of reasons.

14 During the second draft meeting, another
15 public comment was submitted to this time the
16 Technical Committee on fundamentals. Please note
17 that the proposed new language will require all
18 high-rise buildings, new and existing, having
19 occupant load of more than 4,001 people real-time
20 monitoring of exit stair usage displayed in the
21 emergency command center.

22 The subject video monitoring equipment
23 would need a state approval prior to installation.
24 The subject video monitoring equipment will be
25 required to installed in exit stairs in areas not

1 exceeding five stories. Annex text also include
2 information regarding post-incident evaluation of
3 the data in states that will be up to the designer
4 and AHJ to determine how the video equipment will
5 activate and operate, the length of time video
6 monitoring equipment will operate, if storage
7 retention of the video monitoring data is needed,
8 and so forth and how the data will be stored, the
9 schedule and frequencies of inspection and testing
10 and maintenance of the equipment.

11 When the Technical Committee on
12 Fundamentals is balloting on the subject matter, 7
13 of the 26 technical committee members voted
14 negative. Issues raised concerning the subject
15 matter but were not limited to no data analysis
16 test did present that mandated the installation of
17 video equipment will have a measurable positive
18 impact on the safety of building occupants. No
19 information has been provided saying how video
20 equipment, if the data -- video data is to be used
21 full time by fire service or building management.

22 Standard suggesting a design installation
23 operation performance criteria and need for
24 exterior video equipment are lacking. This lack of
25 critical information will lead to the value

1 questioning what operation of performance criteria
2 needs to be met. Based on these reasons, we
3 believe that mandating such video monitoring
4 equipment in all high-rise buildings is premature
5 and in its current form will result in numerous
6 design installation, and enforcement concerns.
7 Therefore, we encourage the NFPA membership to
8 accept motion 101-2.

9 Thank you.

10 PRESIDING OFFICER: Thank you. Let me
11 remind the audience, due to the size of this motion
12 complexity, you're going to have to consult your
13 electronic agenda because it's obviously not just
14 what's shown on the screen there.

15 Mr. Koffel, would you like to offer the
16 Committee's position?

17 COMMITTEE CHAIR: Thank you, Mr. Chair.

18 During the week, I heard some concern that
19 there may be a correlation issue between Chapter 7
20 and Chapter 11 with respect to this issue and
21 protection of penetration and exiting closures. To
22 that issue, I would state that 7132(10) item B
23 specifically allows electrical conduit serving
24 exiting closures to penetrate the exit enclosure.
25 To the extent that this monitoring system is

1 intended to serve the exit enclosure, I will opine
2 that it would be permitted by Chapter 7 and, in
3 fact, there's an annex note to this paragraph
4 citing that indicates that security systems may, in
5 fact, penetrate the exit enclosure. With that in
6 mind, I would ask that a member of the Technical
7 Committee on Fundamentals, Jim Lathrop, please
8 address the Technical Committee's position.

9 SPEAKER: Jim Lathrop, Cost Associates, a
10 member of the fundamentals committee speaking in
11 the absence of the chair. Committee debated
12 this --

13 PRESIDING OFFICER: Excuse me, sir. Are
14 you speaking --

15 SPEAKER: Speaking against the motion.

16 PRESIDING OFFICER: Thank you, sir.

17 SPEAKER: Speaking against the motion.
18 I'm sure Mr. Paul will talk about his proposal in
19 more detail. I do want to point out Chapter 11
20 provisions for high-rise buildings only apply to
21 new construction. It does not apply retroactively
22 unless an occupancy chapter says so. None of the
23 occupancy chapters require it for the video
24 monitoring. Also, it's not only for new. It's
25 only for new, and it seats 4,000 people; so it's

1 not only new high-rise.

2 PRESIDING OFFICER: Thank you, gentlemen.

3 With that, we'll open up debate on the
4 motion. Please provide your name, affiliation,
5 whether you're speaking in support or against the
6 motion.

7 Microphone 6, please.

8 SPEAKER: Shawn McClain with Cleveland
9 Division of Fire and also representing the
10 International Association of Firefighters.

11 We support the --

12 PRESIDING OFFICER: For or against.

13 SPEAKER: I'm sorry. Against the motion.

14 We're supporting to vote against the
15 motion because we support the installation of these
16 cameras in the stairwells. For us, it's a
17 monitoring issue. We see numerous fires where we
18 respond, and we take over the fire command center.
19 We want to see what's happening within that
20 building, especially within the means of egress.

21 You look at th Cook County building fire
22 that happened in Chicago with residents -- I should
23 say occupants were trapped in the attached
24 stairwell above the entry point above the fire
25 fighting operations.

1 We can monitor the egress of the
2 occupants. We can use this information to
3 determine which stairwell we're going to use for
4 attack. This is going back to the NIST study on
5 the World Trade Center collapse.

6 In 2004, the representatives of over
7 300,000 career firefighters voted unanimously to
8 support the code changes that came from that
9 report, and this supports that -- that code change.

10 PRESIDING OFFICER: Thank you.

11 Microphone 3.

12 SPEAKER: Sarah Rice with the Preview
13 Group. I'm speaking in support of the motion.

14 You're hearing a lot of the discussion on
15 the technical aspect for the reasons for the
16 monitoring. What I'm speaking about is the
17 application of the way the provision is written,
18 and it's really important to understand that it
19 says that these will be required for high-rise
20 buildings having an occupant load of 4,000 or more
21 persons. This does not say that it all be required
22 for stairs surveying -- stairs that serve the
23 occupant load of more than 4,000.

24 Without those unique terms in there, what
25 you are possibly opening yourself up to is a

1 high-rise building that has multiple configurations
2 within the complex such as a very large podium of a
3 single story with all of its egress elements at
4 grade but then having a tower portion that may have
5 an occupant load that is well below 4,000. The
6 4,000 occupant load is reached by the occupant load
7 that is at grade, which don't use any of those
8 stairs that are in the high-rise portion. So
9 you're going to get a potential conflicting
10 interpretation of which stairs.

11 Now, what I just gave you was a one-story
12 podium. Think two-story podium even where all the
13 exit stairs in that two-story section don't
14 interact with the high-rise area. You're going to
15 get this requirement kicking in to a place that it
16 wasn't intended to apply.

17 Thank you.

18 PRESIDING OFFICER: Thank you.

19 Microphone 2, please.

20 SPEAKER: Yes. Hi. Good morning. My
21 name is Dan Flanagan of Siemens. I'm representing
22 speaking for the Building Fire Safety Systems
23 section, and we are speaking in opposition of this
24 motion.

25 The section met earlier this week, both

1 the board level and membership level; and we
2 reviewed in detail both the Technical Committee
3 action and the details contained in the proposed
4 modification motion that we're reviewing this
5 morning, and we have concluded that opposition to
6 this is sound.

7 We look at the areas of facts of
8 situational awareness and the importance of that in
9 today's world. As mentioned previously,
10 firefighters safety is of the premium optimum
11 mission here, not to mention the occupant safety.
12 All of these factors given the real-time video
13 imaging information that's going to be obtained by
14 this provides a great deal of value for the
15 occupants of the buildings and the fire fighters
16 are going to be having to suppress this fire
17 situation and not to mention the security concerns
18 in our high-rise buildings today are at a premium,
19 and this is just going to adjunct and assist that
20 important mission as we move forward.

21 So, once again, our section requests that
22 we oppose this motion and support the actions of
23 the Technical Committee.

24 Thank you.

25 PRESIDING OFFICER: Thank you.

1 Do you have someone on Microphone 5 or
2 having discussions? All right. Microphone 2,
3 please.

4 SPEAKER: Jake Paul of Jake Paul's
5 Consulting Services. Speaking against the motion;
6 I feel badly for the proponent of the motion
7 because had video monitoring been in place over the
8 years, he would have had a slam dunk case because
9 we would have known from the video records, based
10 on the work that I did 35 years ago, how many
11 people occupied particular floors. So we could get
12 a much more fine grain set of data. And by the
13 way, my data from 35 years ago supported his motion
14 that failed on the prior item.

15 So I bring a lot of history to this. I've
16 been in this field for 47 years in situational
17 awareness, and the increasing role of video in that
18 situational awareness has been a central feature of
19 my work, and continuous to next week Tuesday, when
20 I give the opening keynote on this topic of
21 situational awareness of evacuation, including use
22 of video at the international conference on tall
23 buildings in London, England.

24 So one of things I looked forward to
25 reporting is how this body opines on this matter to

1 date. I should say, by the way, I've been in the
2 NFPA process for decades. My first meeting in this
3 time was over 30 years ago. I want to comment here
4 on how effectively you handle situational awareness
5 within the process now. This is an excellent
6 example, what we're doing right now procedurally,
7 of what we're trying to do within the context of
8 evacuation issues in tall buildings. In other
9 words, give people a clear idea of what's happening
10 and what that means for the future. So we're
11 learning lessons quite broadly now.

12 Speaking specifically on the issue
13 monitoring exit stairs, I'm not going to go through
14 a detailed rebuttal of the arguments made by the
15 maker of the motion, which is easy to do; but I
16 serve on the high-rise building safety advisory
17 committee, which is the proponent of the change at
18 the second draft stage. It's one of about 15
19 committees on which I serve and one of about 7
20 committees for NFPA, which I represent the American
21 Public Health Association.

22 I'm also an ergonomist by profession. And
23 we're both from the ergonomic's perspective and
24 public health's perspective, situation awareness is
25 really important, not just the safety of

1 firefighters as we've heard but the safety of
2 occupants. But more importantly, the knowledge
3 that occupants will have in conjunction with the
4 people managing the emergency, which will help
5 everybody to make better decisions on their safety
6 and emergencies. So, again, I'm speaking against
7 the motion; and there is much behind this stance.

8 Thank you.

9 PRESIDING OFFICER: All right. Thank you.

10 Microphone 5, please.

11 SPEAKER: Morgan Hurley, Society of Fire
12 Protection Engineers, I speak in favor of the
13 motion.

14 I think the idea of video monitoring on
15 stair enclosures and tall buildings with large
16 number of occupants as occupants has merit, but I
17 see two problems with the language as it still
18 stands.

19 First, this here came in at the second
20 revision stage; so the public really hasn't had the
21 opportunity to review the text and make
22 improvements. Secondly, there's some ambiguity in
23 the requirements. Specifically, you could easily
24 vision a very tall building where you could a
25 hundred or more of these cameras. What's missing

1 from the text of the code requirements how this
2 information is going to be fed back into the
3 control center. Specifically, is there going to be
4 one camera -- or one monitor per camera? Or will
5 there be one monitor that cycles through each of
6 the cameras? If the latter, if you envision,
7 perhaps, a five-second time with each camera, you
8 could have in excess of seven minutes between
9 camera views.

10 So, again, I'm speaking in opposition --
11 or in support of the motion to remove this
12 requirement.

13 Thank you.

14 PRESIDING OFFICER: Okay. Thank you.

15 Microphone 5 again.

16 SPEAKER: Dave Frable, US General Service
17 Administration in support of the motion.

18 In concept, I concur with the proponent.
19 However, as it's written, like I stated in my
20 (inaudible) statement it's broken. There is no
21 installation requirements. No design requirements.
22 No performance requirements on how the system
23 operates. It's up to the AHA. The building
24 officials are going to have to approve this system.
25 There's no performance criterion for acceptance of

1 this equipment.

2 The other issue it deals with, in the
3 annex it talks about evaluating the data coming
4 from this video. Who's going to do evaluation?
5 Nowhere. No information has been provided on that.
6 It's going to lead to an enforcement problem.

7 Regarding some of the comments that were
8 made, I never stated that this was going to be a
9 retroactive of requirement. However, it will
10 impact existing buildings. If the existing
11 buildings or existing chapter within 101 adopts
12 Chapter 11 for this requirement.

13 In addition, somebody brought up the NIST
14 report. NIST has not proposed this code change. I
15 believe, if NIST would have, it would have been
16 more performance-based oriented code change that
17 would be acceptable to the design committee and
18 also the enforcers of the code. Right now, as it
19 is written, it is broken; and I think it's going to
20 lead to enforcement and design problems for new
21 construction.

22 Thank you.

23 PRESIDING OFFICER: Thank you.

24 Microphone 6, please.

25 SPEAKER: Jim Brinkley, International

1 Association of Firefighters, speaking against the
2 motion.

3 I think the argument that the data doesn't
4 exist showing that this would be beneficial should
5 serve as an insult to everyone in this room. To
6 think that you're not intelligent enough to
7 determine that having video monitoring in an
8 emergency situation would not benefit you, shows
9 what the maker of the motion thinks about the folks
10 in this room. It simply is a stall tactic. Any
11 reasonable person would conclude that this will be
12 beneficial during an emergency situation, not just
13 for the first responder that I represent but the
14 citizens that we protect.

15 Arguing over the details, how many
16 monitors, et cetera, that this is premature, it
17 seems that nearly -- excuse me.

18 Over a decade, after 9-11, we're still
19 arguing over the details. We've got ample time to
20 discuss the details to fix these provisions and
21 include the information that those who made this
22 motion are saying the reason we should adopt it.
23 Maybe time dilutes the memories of 9-11 for some of
24 us in this room. Maybe you need a commercial;
25 maybe you need a report; maybe you need something

1 in the news to remind you. Rest assure that 3,000
2 people -- nearly 3,000 people who died that day,
3 their families, their loved ones need no reminder.
4 And certainly, the 343 FDNY Firefighters' families
5 do not need a reminder.

6 I ask you to vote against this motion.
7 Let's get the video monitoring in place. You can
8 argue about the details down the road.

9 PRESIDING OFFICER: Microphone 2.

10 SPEAKER: Good morning. Dan Fennigan
11 again with the Building Fire Safety System Section,
12 speaking in opposition of this motion. And I'm
13 here to address the concerned about additional
14 detail.

15 We intentionally rely on the design
16 professional when this type of code language is
17 introduced for these different types of
18 applications.

19 I will point out that in the text language
20 that was approved by the Technical Committee, there
21 was a direct pointer to NFPA 731, which is the
22 standard for installation of electronic premises
23 security systems. So this will have good
24 direction, good coverage. It seems every building
25 is different. Every application is going to be

1 different. There can't be a prescriptive design in
2 the code. The code is intention to do what it
3 does. The end result will be good situational
4 awareness and all the values that we have pointed
5 out.

6 Thank you very much.

7 PRESIDING OFFICER: Thank you.

8 Microphone 5.

9 SPEAKER: Good morning. Joe Versteeg,
10 Versteeg Associates, speaking in favor of the
11 motion.

12 As Mr. Koffel said, the means of egress
13 chapter currently allows penetrations into the
14 stair for electrical equipment. With that in mind,
15 I think it more appropriate, rather than mandate
16 the video in all new high-rise as well as existing,
17 would be to phrase it such that we're required by
18 the authority having jurisdiction or the authority
19 having jurisdiction shall be permitted so that this
20 decision is made under jurisdictional by
21 jurisdictional basis than mandating its compliance
22 in the jurisdiction that may not need that
23 information or want that information or be able to
24 handle that information.

25 Thank you.

1 PRESIDING OFFICER: Thank you.

2 Microphone 6.

3 SPEAKER: Sherman DeCrane representing
4 International Association of Firefighters speaking
5 against the motion.

6 Just real briefly, I hear about handling
7 information and information overload. That's what
8 we have the incident command system for. We start
9 to assign people specifically specific assignments
10 such as video monitoring so we can look at that
11 stairwell and start to make decision. Good
12 information in, tends to lead to better decisions.

13 And just a sidenote to my good friend Dave
14 over there, we did a joint full-building evacuation
15 in Cleveland in one of the federal buildings, and
16 the first thing Dave and his crew did, when they
17 got to this building, installed monitors -- or
18 cameras so they could monitor the egress of those
19 occupants. And it was good information during the
20 drill. It will be better information in real-world
21 situations.

22 Thank you.

23 PRESIDING OFFICER: Thank you.

24 Microphone No. 2. Please.

25 SPEAKER: Jake Paul, Jake Paul's

1 Consulting Services, speaking against the motion.

2 And specifically to but comments by Morgan
3 Hurley and a little bit by David Frable.

4 I presented information to both the
5 High-Rise building Safety Advisory Committee, which
6 is a fantastic committee. It serves directly to
7 the Standards Council, by the way, just for
8 background. And we've been working on this issue,
9 not in isolation but as a part of a comprehensive
10 package for high-rise safety that we've spent years
11 on. This is not a fly-by-night thing.

12 For example, everything you talked about
13 and put into our proposal could have been a second
14 draft stage was done in the context of preparing a
15 guide to emergency action plans. Now emergency
16 actions plans are already called for by the life
17 safety code, but there wasn't a comprehensive guide
18 for them. Now it exists. It's published by NFPA,
19 and it does reference video monitoring but five
20 times within the guide. So there is an immense
21 amount of work that's been done, and it's in
22 published form.

23 More importantly, there's a lot of
24 experience with this. For example, in the largest
25 high-rise building in London, England, they have

1 both video monitoring and automatic counting using
2 security systems, but that's been in place for a
3 long time.

4 The comment that Mr. Hurley made that we
5 haven't clarified this issue of whether you're
6 dealing with images constantly on the monitor or
7 whether they're cycling through. 30 years ago,
8 that cycling through was demonstrated by the
9 Germans. And you only have to look at that record
10 or that incident for ten seconds to know that it
11 sucks. Now that's a technical term.

12 When I presented this information both to
13 the High-Rise Building Safety Advisory Committee
14 and to the Fundamental Technical Committee in a
15 PowerPoint, I made it very clear that the display
16 system would consist of a -- what, in fact, is a
17 section of a building with small images. For
18 example, it's an iPad or iPhone size image, and
19 that's all you need on a large matrix, and you will
20 have all the stairs that are monitored at
21 five-story integral or whatever. There will be a
22 place devoted for that image. The image would not
23 be active unless there was something happening in
24 that image or in that area. So you would see the
25 image in context. Whenever there's something that

1 happened, they're on. They're relevant. There is
2 no information overload. And how they could forget
3 that and come back with that cycle thing, I don't
4 know.

5 It just astounds me that that comment was
6 made that we didn't think that one through. We
7 have. We have thought through all the issues
8 Mr. Frable talked about. We spent a lot of time on
9 this. He wasn't there.

10 PRESIDING OFFICER: Microphone 5.

11 SPEAKER: Dave Frable, US General Service
12 Administration.

13 To clarify --

14 PRESIDING OFFICER: Speaking for or
15 against, please?

16 SPEAKER: Speaking for the motion and
17 clarifying factually, my two colleagues,
18 Mr. Fennigan and Mr. Crane made.

19 Regarding Mr. Fennigan's statement
20 regarding NFPA 731 that only applies when the
21 monitor system's integrated with a security system.
22 You can have a building without this security
23 system, and these videos cameras will have no
24 standard to go back to verify its performance.
25 That's number one.

1 Number two, what really upsets me the most
2 is what Mr. DeCrane stated regarding the federal
3 building in Cleveland with video cameras. That was
4 for a research study. I understand it's research
5 in which we had a research study to evaluate
6 occupant egress during a fire drill. Video cameras
7 were put up temporarily to evaluate flows down exit
8 stairs to occupants for a research initiative.
9 There are no video cameras installed in that
10 federal building. So I'm not talking out of both
11 sides of my mouth. There are no cameras in that
12 federal building.

13 Once again, this will -- there is no
14 installation operation -- what initiates operation
15 of these cameras? There's nothing -- no
16 performance requirements in the code change.

17 I urge you to support the motion.

18 Thank you.

19 PRESIDING OFFICER: Thank you.

20 Microphone 6. Sir, are you ready?

21 SPEAKER: Larry Felker with Gleemore Air
22 Control speaking against the motion.

23 Addressing a few of the issues that's been
24 brought up, with regard to the occupancy, you have
25 one tower that's a high-rise; and then you try to

1 enforce cameras in the single story.

2 The AHJ will make that decision, and local
3 codes can deal with it. But I don't think there
4 will be any problems whatsoever in deciding on the
5 occupancy, which sort of starts to lean over into
6 enforcement. They should not have any problems.

7 The other thing to consider is that, once
8 you give an industry a task of doing any
9 identification, the software will be able to take a
10 look at movement and other things; and it will
11 become quite sophisticated beyond what we would
12 expect today.

13 PRESIDING OFFICER: Thank you.

14 Microphone two.

15 SPEAKER: Thank you, Mr. Presiding
16 Officer. Art Black, Carmel Fire Protection
17 Associates, I call to question.

18 PRESIDING OFFICER: We have a call to
19 question.

20 Do we have a second?

21 UNKNOWN SPEAKER: Second.

22 PRESIDING OFFICER: We have a call to
23 question. There is a second.

24 There is a vote to cease debate and go
25 right to the vote on it. We need a two-thirds

1 majority on this. So if you're ready, if you are
2 in favor of calling to question, in other words,
3 ceasing debate, please press one.

4 If you are opposed to that motion, press
5 two. Please vote now. And we'll have to maybe do
6 a little bit of simple math to see if we've got the
7 two-thirds.

8 Five seconds. Voting is closed.

9 I don't think we need to even do the math.
10 It's 222 calling to question, 36 against, which
11 means we will move right to the vote.

12 Before we go vote, let me restate the
13 motion.

14 The motion on the floor is to reject
15 Second Revision No. 20 and any related portion of
16 first revisions, reject Second Revisions No. 22,
17 No. 24, and No. 23, thereby deleting the new
18 section corresponding annex and references.

19 If you wish to vote in favor of the motion
20 and recommended text on screen one, press one. If
21 you wish to vote against the motion and recommended
22 text on screen two, press two. Please record your
23 vote.

24 Five seconds. Voting is closed.

25 The results are 94 in favor, 157 against.

1 The motion fails.

2 Let's now proceed with discussion on
3 Certified Amending Motion 101-3.

4 Microphone No. 5, please.

5 SPEAKER: I'm Kelly Nicoletto, State Fire
6 Marshal, Alaska, representing the State Fire
7 Marshals. I'm in favor of Motion 101-3, rejecting
8 Second Revision No. 123 and any related portions of
9 first revisions to No. 427 recommending the
10 previous edition text.

11 PRESIDING OFFICER: There's a motion on
12 the floor to reject Second Revision No. 123 and any
13 related portion of First Revisions No. 427, thereby
14 recommending the previous edition text.

15 Is there a second? Do I hear a second?
16 Please proceed.

17 SPEAKER: I'm Kelly Nicoletto, State Fire
18 Marshals. I'm in favor of the motion.

19 The National Association of State Fire
20 Marshals is opposed to proposed changes to NFPA 101
21 that almost exponentially increases the allowable
22 smoke compartments in hospitals from 22,500 square
23 feet to 40,000 square feet. There have been no
24 introduction of scientific evidence or fire risk
25 assessments to support their proposal. There are a

1 range of fire assessment tools to choose from to
2 prove the safety of a proposal such as NFPA 55.1,
3 evaluation of roof assessments, the SFPE
4 Engineering Guide or ISO 16732-1 Fire Safety
5 Engineering, but none have been submitted.

6 The basis for this proposal appears to be
7 based on marketing data and some assumptions
8 anticipating deficiencies that have not been
9 qualified.

10 Health care facilities are one of the most
11 regulated occupancies because they are so important
12 to our communities because patients are so
13 vulnerable. Maintaining passive and active parts
14 suppression design elements is the major cost of
15 doing business. Lowering the bar to eliminate
16 maintenance cost by increasing compartment size
17 with no engineering analysis to support the premise
18 and doing so at the risk of patient safety is not
19 the methodology NASM would support in light of the
20 justification provided for those proposals.

21 The supporting statement mentioned a
22 future analysis regarding the recognized -- the
23 recommended size of the smoke compartments, but it
24 was not provided for public comment.

25 The history of NFPA 101 went from a travel

1 distance of 150 feet in a smoke compartment 22,500
2 square foot, and then 22,500 square feet with the
3 travel distance of 200 feet. Now, the new proposal
4 of 40,000 square feet NASM believes the logic
5 expressed and the statements support by the
6 Technical Committee is flawed. It assumes travel
7 distance is linear, therefore, doubling the square
8 footage to support the travel distance is
9 justified. However, travel distance is anything
10 but linear but, in fact, circuitous and a
11 roundabout.

12 I predict that, if 40,000 square foot
13 smoke compartments are approved, proponent will be
14 back asking for an increase in travel distance
15 because of design limitations. It's been argued
16 that there have been few fires in sprinkler
17 buildings. So the increase is justified in a fire
18 marshal's historically supported sprinkler
19 tradeoffs.

20 To date, you can reduce the construction
21 type, increase the size in height of a hospital for
22 sprinkler. It's in a case where all of the
23 protection eggs are in one basket. Unfortunately,
24 post analysis of fire events usually are an
25 accumulative series, a seemingly inconsequential

1 events run together as the unit become the
2 reasoning of the catastrophic event.

3 It's as if we're playing the game of Jenga
4 to see how many pieces we can pull out of the
5 construction before it topples.

6 I've had the opportunity to be in a number
7 of meetings this last week. There seems to be some
8 talk about being able to come back to 40,000 may
9 not be the right answer. We appreciate being able
10 to talk about the size, but we don't believe that's
11 the right way. I would ask you to support the
12 motion.

13 PRESIDING OFFICER: Thank you.

14 Mr. Koffel, would you like to offer the
15 Committee's position, please?

16 SPEAKER: Thank you, Mr. Chair.

17 During the first revision, the Correlating
18 Committee added a note to the first revision that
19 addressed this issue on smoke compartment size.
20 The Correlating Committee added the note because we
21 did not believe that the analysis referred to in
22 the public input had been made available to the
23 Technical Committee.

24 It is my understanding that, during the
25 second draft revision meeting, that analysis was,

1 in fact, available to the Committee and enabled
2 them to make their decision.

3 With that in mind, I would ask the Chair
4 to recognize the chair of the Technical Committee
5 on Health Care Occupancy, David Klein to address
6 the Committee's perspective.

7 SPEAKER: Thank you, Mr. Chair.

8 My name is David Klein. I'm with the
9 Department of Veterans Affairs. I'm the chair of
10 the Technical Committee on Health Care Occupancies.

11 The Technical Committee --

12 PRESIDING OFFICER: You're speaking
13 against the motion? Just for the record.

14 SPEAKER: Speaking against the motion.

15 PRESIDING OFFICER: Thank you.

16 SPEAKER: The Technical Committee
17 considered the fact that the maximum area permitted
18 for smoke compartments and health care occupancies
19 has been limited to 22,500 square feet for many
20 years. However, over the years, several factors
21 that affect the design of health care occupancies
22 have improved. For example, automatic sprinkler
23 protections is now required for new construction.
24 Fire detection system reliability have improved
25 electrical standards for mechanical equipment have

1 improved, for medical equipment have improved, and
2 health care occupancy benefits from the trend
3 towards smoking-free environments.

4 In addition, as the design of health care
5 occupancy has evolved over the years, there's been
6 a trend that hospital patients are frequently
7 provided with more space than was typical in
8 designs in the past. An example of this trend is
9 the increased percentage of single-occupant
10 hospital use. This trend has resulted over time
11 and de facto reduction in the occupant load.

12 In light of these factors, the Committee
13 concluded that, for hospitals, it would be
14 appropriate to t permit increase in the maximum
15 area of smoke compartments to 40,000 square feet.
16 This change would apply only to hospitals and a
17 200-foot limit on travel distance from any location
18 within the smoke compartment to a door in the
19 required smoke barrier will not change. It was
20 felt that the 40,000 square foot area for hospital
21 smoke compartments is more appropriate than 22,500
22 square feet for contemporary hospital conditions.

23 Thank you.

24 PRESIDING OFFICER: Thank you, gentlemen.

25 With that, we'll open up debate on the

1 motion. Please provide your name and affiliation,
2 whether you're speaking in support or against the
3 motion.

4 Microphone 5, please.

5 SPEAKER: Kelly Nicoletto in support of
6 the motion, representing National Association of
7 Fire Marshals.

8 The health care industry has kind of left
9 themselves open to a challenge on the expansion of
10 smoke compartments by not even using patient count
11 as a limiting factor and simply growing a number of
12 square feet. In their justification, they're
13 openly assuming that counting on the fact that
14 40,000 square foot compartments won't have any
15 locations than 22,500 square foot compartments as
16 contained in the past, but the Committee's language
17 doesn't say that. It just says 40,000 square foot
18 period regardless of whether it's in patient care.
19 Whether it's in clinical, whether it's up on upper
20 floors, whether it's on the base floor. They made
21 no distinction, whatsoever, in that area.

22 I will urge you to support the motion.

23 PRESIDING OFFICER: Thank you.

24 Microphone 6.

25 SPEAKER: Mike Canales. I'm with

1 Owensboro Community and Technical College. I'm
2 26-year health care facilities manager. I speak
3 against the motion.

4 You know, health care is probably one of
5 the most -- behind nuclear and air traffic, most
6 regulated businesses there are. We take a lot of
7 energy to life safety training, storage,
8 combustible material, travel distances, fire
9 alarms, we go on. I could spend the next three
10 minutes talking about all the things we do to
11 maintain a safety environment.

12 We have been rewarded with an impeccable
13 history on lives and deaths in fires. Regulation
14 tends to have a tendency to restrict our ability to
15 reduce our cost to serve our patients and to be
16 able to just get the job done. In this case, a lot
17 of good discussions have occurred upon this 40,000
18 square feet. I appreciate the format, but I
19 believe it's time to just allow this to be voted
20 against. I think we're very responsible,
21 accountable; and I believe that this should be
22 voted against and should be allowed to build 40,000
23 square foot smoke compartments.

24 That ends my comments.

25 PRESIDING OFFICER: Thank you.

1 Microphone 1.

2 SPEAKER: Thank you. My name is
3 Vickie Lovell. I'm the executive director for Fire
4 Safety of America, and we're the co-proponent of
5 this amendment.

6 PRESIDING OFFICER: So you are speaking in
7 favor?

8 SPEAKER: Speaking in favor.

9 PRESIDING OFFICER: Thank you.

10 SPEAKER: I just like to take one second
11 and compliment NFPA staff on this new format for
12 displaying both the results of the failure or
13 success of motions. It's very nice, very helpful
14 to the membership; and thank you for that effort.

15 And we also agree with the Technical
16 Committee that it probably is time to look at the
17 configuration of a smoke compartment in hospitals.
18 However, we unfortunately can't support their
19 recommendation of 40,000 square feet increase ever
20 because it hasn't -- as been mentioned previously,
21 it hasn't really been technically justified for
22 such a big increase to the -- one of the previous
23 speaker's components health care has a very good
24 record in fire and life safety. And to make a big
25 adjustment without sufficient evidence that this is

1 an appropriate number is possibly a risk that we
2 may not want to take.

3 One of the issues is how the 40,000 has
4 been arrived at. It's understood and admitted to
5 by the Committee of the proponents of this. It's
6 an arbitrary number that was based on an arbitrary
7 number. That does not seem like NFPA's way for
8 justifying such a large change.

9 Really, the only considerations on this
10 has been needing more space for patient care, more
11 space for equipment, more space for privacy and
12 living considerations. That's not a technical
13 justification. We also believe -- I think another
14 speaker may have made this point, but it is an
15 important one -- that there is no occupant limit on
16 this. And while there may be some limitations
17 built into the regulation in some states for
18 staffing and patient limitation, that's not the
19 case everywhere. Our suggestion is that, when you
20 consider the increased occupant load potentially,
21 the increased fire load for sure, the arbitration
22 of a number that is important, we have to consider
23 all these tactics in making a decision.

24 We also consider the possibility of are
25 going back -- sending this back to the committee

1 and asking them to look at it again. Maybe there's
2 not a need for a specific number. Maybe it's a
3 patient number and a travel distance. There's a
4 number of combinations that may be used to arrive
5 at a more appropriate justifiable number than
6 40,000 -- than this particular number.

7 So we ask the membership to be
8 conservative on this. It's a big risk that you're
9 taking to double the size of smoke compartments,
10 and to send this back to the Committee, ask them
11 for more definitive answers on some of the
12 questions that are yet to be resolved.

13 PRESIDING OFFICER: Thank you.

14 Microphone No. 2, please.

15 SPEAKER: Jim Williams, Washington State,
16 Department of health. We are the authority having
17 jurisdiction for administrating life safety code in
18 Washington State speaking against the motion.

19 I think smoke compartments are very
20 important. They're a key to the defend and place
21 environment. But size of smoke compartments isn't
22 the only criteria. There are several criteria.
23 First of all, we require smoke compartments, at
24 least two on the majority force in every health
25 care facility.

1 Second of all, there is a 200-foot travel
2 distance limiter; and that's not a travel distance
3 to an exit. That's a travel distance to a smoke
4 barrier door through leads to another smoke
5 compartment. I see designers get this wrong all
6 the time. I believe that is the true limiter in
7 smoke compartment size. Let's talk about
8 substantiation.

9 The proponents of this original change
10 that the committee -- Technical Committee approved,
11 I thought provided compelling reasons why they were
12 seeking to make the change. Smoke compartments are
13 simply less dense, less patient dense than they
14 were 20 years ago. The FGI guidelines state
15 licensing rules that I enforce are constantly
16 requiring the rooms to get larger, patient rooms to
17 get larger.

18 The Technical Committee believes the
19 substantiation, supported it. That's why they made
20 the change. I don't see any technical
21 substantiation for this certified amending motion.

22 I did some research of my own when I went
23 back and I saw this change. I went back to every
24 facility in my office that I could pull up my
25 safety plans for, and I looked to see where smoke

1 compartments could get larger. I found a couple of
2 situations, but by and large, most of these
3 facilities aren't going to be able to take
4 advantage of the change because they simply don't
5 need the 200-foot travel distance. And then, when
6 I go back and I think about all the health care
7 facilities that I've seen over the past 15 years
8 when I've been reviewing plans currently with the
9 smoke compartment size as it stands, frequently
10 several, several times a year I will find 200-foot
11 travel distance busts in those 225 -- 22,500 smoke
12 compartments. I think that is the true limiter.

13 So I urge you to vote against this motion
14 and support the Committee.

15 PRESIDING OFFICER: Thank you.

16 Microphone 5, please.

17 SPEAKER: Good morning. My name is
18 Angie Wiese. I am the president of Fire Marshals
19 Association of Minnesota and as such speaking here
20 on behalf of International Fire Marshals
21 Association.

22 The International Fire Marshals
23 Association --

24 PRESIDING OFFICER: Excuse me. You're
25 speaking for the motion?

1 SPEAKER: Yes.

2 PRESIDING OFFICER: Thank you.

3 SPEAKER: The International Fire Marshals
4 Association is opposed to the proposed changes of
5 NFPA 101 and 5000 that almost doubles the allowable
6 compartment size of hospitals. In addition to the
7 lack of sufficient technical justification based on
8 scientific research that insurers are seeking
9 environment for occupants of hospitals. The
10 proponents offer no increased level of protection
11 that would help offset the loss of safety provided
12 by the current smoke compartment size.

13 You've heard others talk about the lack of
14 the Technical Committee supporting this significant
15 reduction in the level of safety in health care
16 facility. The Fire Protection Research Foundation
17 is studying this issue with the main goal providing
18 input to the Technical Committee regarding the
19 potential impact of this change based on the
20 results of computer modeling various relocation
21 scenarios. This study is continuing.

22 The International Association -- the
23 International Fire Marshals Association will
24 request that the Foundation review the scope of
25 research to ensure all aspects of the impact have

1 been covered or addressed during consideration of
2 public input on the proposal as well as comments
3 from those in attendance speaking in opposition to
4 the proposal.

5 This proposal is un -- undeniably reduces
6 the safety and increases risks to patient and other
7 occupants with no corresponding proposals to
8 provide additional safety measures.

9 The Committee statement in rejecting
10 public comments spoke of the original compartment
11 sizes 30 years ago in those changes in health care
12 facilities. They produced no real technical data
13 for their comments. During that same time and
14 based on technical data, fire risks have also
15 increased, including demonstrated reduction times
16 leading to flashover. We also have much better
17 tools that we use today than were available
18 30 years ago too assess hazards.

19 Because of the new technology addressing
20 how the code has developed 30 years ago is not
21 relevant but should be based on modern technology.

22 There are too many questions revolving
23 around this proposal to approve this significant of
24 a change. It's prudent to wait for the results of
25 the Fire Protection Research Foundation study so

1 that you can provide more appropriate measures for
2 this issue.

3 Thank you.

4 PRESIDING OFFICER: Thank you.

5 Microphone 6.

6 SPEAKER: My name is Richard Horeis. I'm
7 the health care architect with HGR Architecture.
8 I'm also a member of the Technical Committee on
9 Health Care Occupancies. I speak for myself in
10 opposition to this motion.

11 For 36 years, I have designed 22,500
12 square foot smoke compartments based on expired
13 code requirements of 150-foot maximum smoke
14 compartment dimensions. The true limiting
15 requirement we now utilize is a maximum 200-foot
16 travel distance to a smoke compartment door.

17 The 40,000 square foot compartment we want
18 is not an arbitrary number. No more arbitrary than
19 the 22,500 square foot compartment established
20 decades ago. What's now required, smoke and heat
21 detection, automatic sprinklers, including quick
22 response type, limited -- mostly limited or
23 noncombustible construction finished materials with
24 fire class ratings, larger patient's sleeping and
25 treatment rooms. We have most patient's sleeping

1 rooms being single occupancy, lessening the patient
2 occupant load per square foot. Caregiver to
3 patient ratios remain the same regardless how large
4 or small a smoke compartment is, and the 200-foot
5 travel distance from smoke compartment doors
6 remains in place.

7 In fact, with experience in the designing
8 the health care facilities and meeting 200-foot
9 travel distance restrictions, most smoke
10 compartments most likely will remain less than
11 40,000 square feet. However, keeping 40,000 square
12 feet smoke departments will allow us more latitude
13 in safe health care design.

14 We should reject the motion in place and
15 bring this code requirement into the 21st Century.

16 Thank you.

17 PRESIDING OFFICER: Thank you.

18 Microphone No. 1, please.

19 SPEAKER: Good morning, everyone. My name
20 is Sajid Graza, S-A-J-I-D. It's a difficult name
21 for you. I come from Dubai. (Inaudible). I'm
22 with the UAE Fire and Life Safety Code Committee,
23 and (inaudible) inspector. (Inaudible) person and
24 UAW Society of Engineers.

25 Being on the UAE Fire --

1 PRESIDING OFFICER: Excuse me, Sir. Did
2 you say you're in favor?

3 SPEAKER: I am in favor of the motion.

4 Being on the UAE Fire Code Committee and
5 particularly being out of the Regulating
6 Construction and Compartment chapter, I strongly
7 feel that proposed reduction in fire protection
8 would have an adverse and significantly diminish
9 safety in the hospitals. The basis of my statement
10 I intend to read out here, includes but not limited
11 to No. 1, NFPA codes and standards. Particularly
12 101 and 5000 are extensively apply in countries
13 other than the U.S.

14 No. 2, most of these countries have a fire
15 structure that is nowhere as that of the U.S.
16 Construction (inaudible) that are often -- often
17 not at their best. Traffic jams further add to the
18 misery. Eventually, height response time in such
19 (inaudible) I would like to ask humbly to Committee
20 do they need more compartmentation or less?

21 No. 3, we all know the fact that the smoke
22 particular, 35 percent of the deaths are caused by
23 smoke, and we need to continue. In addition, we
24 can't rely on some of the safeguards. Balanced
25 fire protection is an absolute necessity. And the

1 compromise in the smoke compartment condition
2 should be seriously reviewed.

3 No. 4, the very large smoke compartment of
4 40,000 square feet clearly principles of very high
5 levels of training of hospital staff on all shifts.
6 To get everyone out over these larger areas, that
7 type of high level is tough, should definitely not
8 be assumed in other countries where NFPA 101 is
9 being used. One has to wonder, if hospital
10 (inaudible) in all U.S. hospitals would really be
11 good enough to get everyone out of such a large
12 area?

13 No. 5, it must be acknowledged that the
14 particular system can and will fail. If we are
15 depending on them to function and they fail,
16 people will be at considerably more risk. Failure
17 rate in the U.S. might be low. However, in the
18 region I come from, primarily installation quality
19 and the maintenance are the issue. In addition,
20 let's think about some countries that do not even
21 have enough water for drinking.

22 My concluding remarks, I really like to
23 summarize my condition in three sentences. Many
24 countries are not opinion of people, which I
25 mentioned earlier. These nations are not --

1 particularly not or simply can't afford to modify
2 the code that you put out. Therefore, the
3 Committee has more responsibility that extends
4 (inaudible) in the U.S.

5 No. 2, if the Committee makes a decision
6 to increase compartment size based on the data
7 correlated for the U.S., and which means here in
8 the U.S. opposed, it means in my humble opinion --

9 PRESIDING OFFICER: Sir, excuse me.
10 You're out of time.

11 SPEAKER: Thank you very much for your
12 patience listening.

13 PRESIDING OFFICER: Thank you.

14 Microphone No. 4, please.

15 SPEAKER: Skip Gregory, Health Facility
16 Consulting speaking against the motion.

17 As a former employee and jurisdiction for
18 over 20 years and member of the FGI Guidelines
19 Committee for the design and construction of health
20 care facilities, I've seen over the last number of
21 years a dramatic increase in size of diagnostic and
22 treatment areas in the hospital environment
23 without the increase of occupancy in those
24 departments.

25 The 22,5 has not kept up with these

1 dramatic changes of hybrid ORs, which can now be in
2 excess of 12 hundred, 14 hundred, even 2,000 square
3 feet. Treatment rooms have increased in square
4 footage. MRIs areas have increased in square
5 footage. And what happens, when you're trying to
6 design a department in the hospitals, the 22,5
7 often cuts inside that department and disrupts the
8 clinical services necessary for a well-functioning
9 health care environment.

10 So I think this is a reasonable updating
11 of the code for the hospital environment, and I
12 urge you to support the Technical Committee, and
13 vote against this motion.

14 PRESIDING OFFICER: Thank you.

15 Microphone 5, please.

16 SPEAKER: Larry Felker with Gleemore Air
17 Controls. I'm speaking for the motion.

18 I'm not too sure that the various
19 proposals at both ASG and ICC and this proposal
20 here, the same people have really considered the
21 dangers of fires and smokes in hospitals. NFPA's
22 fires in the health care facility by Marty Eric
23 November 2012, gives a yearly average of 6,240
24 structure fires in health care facilities. Six
25 deaths, which disagrees with the statement made by

1 one man over there, and 171 civilian injuries.
2 Fires are real in hospitals. Smoke alarms are
3 needed.

4 Two cases of fires and smoke problems. As
5 an example of this, in January 2009, a fire broke
6 out in the second floor mechanical room at
7 Mt. Sinai Hospital in New York City. There was a
8 lack of smoke control and/or functioning
9 containment smoke dampers. Smoke spread out to the
10 eighth floor and all the subsidiary floors, and 600
11 patients were driven out. They were relocated,
12 many of them on the street. There were no injury
13 reports available regarding patients and staffs,
14 but there were six firefighters who reported minor
15 injuries.

16 Another fire -- on that fire, the fire was
17 limited to the mechanical room. It's just that the
18 smoke was the big spread.

19 In November 2011, 250 patients were
20 evacuated from the adult and pediatric emergency
21 rooms intensive care unit of Mt. Fiore Hospital in
22 New York City. A generator caught fire and oil
23 tanks spread black smoke everywhere. It was just
24 biliary out of the air vents. The people were
25 moved out. The fire was limited to the room of

1 origin, but there was a major dislocation due to
2 smoke. They did not have compartmentation.

3 According to news report, some patients
4 were in critical condition. There was one patient
5 under general anesthesia in surgery. Ten people
6 suffered minor injuries, and one woman was struck
7 by a car in the street.

8 We're not -- as far as I'm concerned,
9 we're not seeing smoke treated responsibly as we
10 might be. The process occurring over the last
11 years, as far as 150 --

12 PRESIDING OFFICER: I'm sorry, sir. Your
13 time is up.

14 SPEAKER: Thank you.

15 PRESIDING OFFICER: Thank you.

16 Microphone 2.

17 SPEAKER: Yes, Susan McLaughlin, MSL
18 Healthcare consulting, speaking on behalf of the
19 Health Care section and speaking against the
20 motion.

21 The Health Care voted at our meeting
22 yesterday to speak and to oppose this motion. The
23 reasons primarily or reasons that you've heard
24 already. Just briefly, the decrease in patient
25 density within the hospitals due to the increase in

1 room size, the constant travel distances to an
2 exit, which will remain and which will limit the
3 actual size of the smoke compartment, and finally
4 the staffing ratios, which are based on the patient
5 population, not on a floor space.

6 We urge you to vote against this motion.
7 Thank you.

8 PRESIDING OFFICER: Thank you.

9 Microphone 3, please.

10 SPEAKER: Marcelo Hirschler, GBH
11 International, I call to question.

12 PRESIDING OFFICER: We have a motion to
13 call to question.

14 Do we have a second?

15 UNKNOWN SPEAKER: Second.

16 PRESIDING OFFICER: There's a second.

17 The motion to call to question is a vote
18 to cease debate and go directly to the vote. This
19 requires a two-thirds majority. If you are in
20 favor of calling to question and ceasing the debate
21 and going to the vote, press one. If you are
22 opposed to this, press two. Please vote now.

23 Five seconds. Voting's closed.

24 All right. Even with my math, I can tell
25 that that has passed with a two-thirds majority.

1 So we go right to the vote.

2 Before we do vote, let me restate the
3 motion. The motion on the floor is to reject
4 Second Revision No. 123 and any related portions of
5 First Revision No. 427, thereby recommending
6 previous edition text. If you wish to vote in
7 favor of the motion and recommended text on screen
8 one, press one.

9 If you wish to vote against the motion and
10 the recommended text on screen two, press two.
11 Please vote now.

12 Five seconds. Balloting is closed.

13 The results are 129 in favor, 121 against.
14 The motion passes. Thank you.

15 Okay. Now let's proceed with the
16 Certified Amending Motion 101-4. Do we have
17 somebody -- Mr. Peterkin? There he is.

18 Microphone 5, please.

19 SPEAKER: Tim Peterkin, Heery
20 International, speaking on behalf of the health
21 care section code and standard review committee
22 move to accept CAM 104 -- 101-4, a group amendment
23 motion to reject second revision 117 and any
24 related portions of First Revisions of 434 and 540
25 and Reject Second Revision 118 and any related

1 portions of First Revisions 486 and 572.

2 PRESIDING OFFICER: Thank you. The group
3 amending motion on the floor is to Reject Second
4 Revision No. 117 and any related portions of First
5 Revisions No. 434 and No. 540 and reject Second
6 Revision No. 118 and any related portions of First
7 Revisions No. 486 and No. 572, thereby deleting new
8 sections and corresponding annex.

9 Do we have a second for this motion?

10 UNKNOWN SPEAKER: Second.

11 PRESIDING OFFICER: I hear a second.

12 Please proceed with discussion on the
13 motion.

14 SPEAKER: Yes, Tim Peterkin speaking on
15 behalf of Health Care Section Code and Standard
16 Review Committee. We looked at this motion or this
17 passage that was added to the code. For years,
18 there was an enforcing agency that was asking for
19 building maps being posted throughout the
20 hospitals, indicating evacuation routes. As we
21 know, hospitals, we don't evacuate. We defend and
22 place. So it's been a battle to get these out of
23 the hospitals over the years, and we've pretty much
24 gotten there.

25 Our concern here is, even though there's

1 language here that says it is not the intent that
2 this provision that we have evacuation with maps
3 posted again, we think the language needs some
4 correction here because in the annex it kind of
5 implies that it is for occupant use and not for AHJ
6 to use in their evaluation.

7 So we're not opposed to the idea. We're
8 just opposed to the way it's kind of worded. We're
9 afraid that we're going to get back to facts posted
10 throughout the hospital again, which is not
11 something we all want.

12 I urge you to support the motion.

13 Thank you.

14 PRESIDING OFFICER: Thank you.

15 Mr. Koffel, would you like to offer the
16 Committee's opinion?

17 COMMITTEE CHAIR: Thank you, Mr. Chair.

18 I'm not aware of any correlation issues
19 with this certified amending motion. Therefore, I
20 would request the Chair recognize the Technical
21 Committee Chair, David Klein, to address the
22 Committee's perspective.

23 PRESIDING OFFICER: Microphone 2.

24 SPEAKER: Thank you, Mr. Chair. My name
25 is David Klein with the Department of Veterans

1 Affairs, and I'm the chair of the Technical
2 Committee on Health Care Occupancies, speaking
3 against the motion.

4 Attempts have been made to define means of
5 egress corridors. This has proved to be difficult
6 and has not resulted in clear definition for code
7 users. The purpose of this requirement is to have
8 available, when required by the AHJ, a written
9 indication of the location of required corridors in
10 smoke compartments where there are spaces that are
11 separated from the designated corridor by position.

12 Having a designated corridor location
13 should eliminate any confusion between non corridor
14 area and the actual path of egress corridor travel
15 and can be particularly useful for purposes of
16 inspection with respect to required corridor width,
17 lighting, egress marking, and other considerations
18 with the intent that there is no need to designate
19 corridors in locations where the corridors are
20 defined by fixed partitions. It is also the
21 intent, as stated in the annex note, that these
22 floor plans should not be required to be posted.

23 Thank you.

24 PRESIDING OFFICER: Thank you, gentlemen.

25 With that, we will open up debate on the

1 motion.

2 Please provide your name, affiliation,
3 whether you're speaking in support or against the
4 motion.

5 Microphone No. 1 please.

6 SPEAKER: My name is Skip Gregory, Health
7 Facility Consulting. I'm speaking in favor of the
8 motion to delete this new language. I'm
9 representing the Health Care Section and also
10 speaking as an authority having jurisdiction for
11 over 25 years.

12 For me, the code cycles. Both Chapters 18
13 and 19 of the Life Safety Code have permitted
14 certain types of unlimited areas to be open to the
15 corridor without any documented problems. There
16 have been no need for a plan to designate where the
17 corridor is located. In fact, Chapter 7 of the
18 Life Safety Code already requires exits that shall
19 be located and existing exits shall be arranged so
20 that exits are readily accessible at all times. So
21 exit corridors are supposed to remain clear of
22 obstructions. If they are not, a citation is
23 issued.

24 Since 2012 edition of the code, there have
25 been revisions to encourage the design of less

1 institutional environments, but there has been no
2 dramatic change to the open corridor provisions.
3 The new language is intended to prevent authority
4 jurisdiction from requiring the facility to add
5 railings or floor material changes or other such
6 additional requirements to identify the location of
7 the corridor, but the AHJ still insert these kind
8 of requirements regardless of this new language.
9 The only thing that can change that kind of
10 misunderstanding of that authority having
11 jurisdiction is, perhaps, better education.

12 Unfortunately, this new language gives the
13 authority having jurisdiction unspecified
14 authority. To require every existing health care
15 facility that has spaces open to the corridor
16 produce a floor plan indicating where the corridor
17 is located. What kind of plan is this to be? The
18 language does not say. So the AHJ could very well
19 require an architectural or engineer life safety
20 plan of the entire building showing the corridors.
21 There is inevitably a bureaucracy placed so the
22 facility with absolutely no increase in life safety
23 for the residence of patients. However, the
24 facility and the authority having jurisdiction need
25 to agree, where the corridor is located, they can

1 simply use a photograph or a plan or a verbal
2 description to do this without this additional
3 language.

4 We are supportive of more clarity to the
5 code regarding corridors. We're not supportive of
6 this particular language.

7 Thank you.

8 PRESIDING OFFICER: Thank you.

9 Microphone No. 2, please.

10 SPEAKER: Jim Meiser of Koffel Associates,
11 speaking for myself and speaking against the
12 motion.

13 I really don't see the difficulty that
14 this proposal is providing to the owners. There's
15 been so many dramatic changes with the 2012 edition
16 of the code, especially with regard to long-term
17 care facilities in trying to determine where these
18 spaces are. Some of these new long-term care
19 facilities are being built, and it's very easy for
20 the living areas and the dining areas to just creep
21 into what is supposed to be the corridor because
22 there is no idea where the corridor even is.

23 I really don't think it's going to affect
24 the traditional hospital. It's more aimed at the
25 newer long-term care facilities, and I don't see a

1 huge burden that this is providing.

2 PRESIDING OFFICER: Thank you.

3 Is there any further discussion on Motion
4 101-4? Seeing none, Mr. Koffel, any final words?

5 COMMITTEE CHAIR: No, sir.

6 PRESIDING OFFICER: Okay. We'll move to a
7 vote. Before we vote, let me restate the motion.

8 The motion on the floor is to reject
9 Second Revision No. 117 and any related portions of
10 First Revisions No. 434 and No. 540 and reject
11 Second Revision No. 118 and any related portion of
12 First Revisions No. 486 and No. 572, thereby
13 deleting new sections session and corresponding
14 annex.

15 If you wish to vote in favor of the motion
16 and recommended text on screen one, press one.

17 If you wish to vote against the motion and
18 recommended text on screen two, press two. Please
19 record your votes now.

20 Five seconds. The balloting is closed.

21 The results are 65 in favor, 154 in
22 opposition. The motion fails.

23 Let's now proceed with discussion
24 Certified Amending Motion 101-5.

25 Microphone 5, please.

1 SPEAKER: I'm Kevin Nicoletto, with State
2 Fire Marshals, Alaska, representing the National
3 Association of State Fire Marshals. I'm in favor
4 of Motion 101-5 rejecting second revision to
5 No. 124 and any related portion revision to No. 482
6 recommending previous edition text.

7 PRESIDING OFFICER: Thank you.

8 There is a motion on the floor to reject
9 Second Revisions No. 124 and any related portions
10 of First Revisions No. 482, thereby recommending
11 previous edition text.

12 Is there a second?

13 UNKNOWN SPEAKER: Second.

14 PRESIDING OFFICER: I here a second.
15 Please proceed.

16 SPEAKER: I'm Kelly Nicoletto, State Fire
17 Marshal Alaska representing National Association of
18 State of Fire Marshals. I'm in favor of the
19 motion.

20 In my previous testimony, that was geared
21 around new construction in 101. This is the exact
22 same issue except it is it in existing construction
23 in 101, having to do with the size of smoke control
24 areas in existing hospitals.

25 There was previous testimony in the

1 previous issue that was relating to existing
2 facilities. I'm not a hundred percent sure that
3 this was for new construction within 101, but now
4 we're in existing construction. I just want to
5 make sure everybody knows that.

6 So in the justification from the Technical
7 Committee of why this should be allowed in existing
8 construction, it appeared to be a matter of
9 fairness. If it were to pass in new construction,
10 previous hospitals that have built it to the 22,500
11 criteria would then be quote, unquote "penalized."
12 And it would only be fair if we allow them to also
13 have 40,000 square feet. And that was the
14 justification pretty much.

15 My position is still the same from the
16 standpoint it should all be based on this analysis,
17 especially in existing construction. Since the
18 money's been spent, the designs been made,
19 decisions made, and these systems put into place
20 and now we're going to ignore them, not maintain
21 them, put holes through them to allow a larger
22 space for more patient space in the other areas
23 that were presented.

24 So I kind of like to use the justification
25 the committee did. I think that, based on the

1 action that we just took on new construction, I
2 think it will only be fair that existing
3 construction continues to use 22,5 and not be able
4 to go to 4,000 because new construction would not
5 be allowed to do that also.

6 So I would ask you to support the motion.
7 Thank you.

8 PRESIDING OFFICER: Thank you.

9 Mr. Koffel, would you like to present the
10 Committee's position, please?

11 COMMITTEE CHAIR: Thank you, Mr. Chair.

12 Again, I do not see a correlation issue
13 with this item; so I would ask that the chair of
14 the Technical Committee on Health Care Occupancies,
15 David Klein, to address the Committee's
16 perspective.

17 PRESIDING OFFICER: Microphone 2, please.

18 SPEAKER: Thank you, Mr. Chair. My name
19 is Dave Klein. I'm with the Department of Veterans
20 Affairs. I'm the chair of the Health Care
21 Technical Committee, speaking against the motion.

22 The issues related to the proposed changes
23 there to sectioned 19.3.7.1 for existing hospital
24 facilities are similar to the issues that were
25 previously discussed for the proposed changes to

1 Section 18.3.7.1 for new hospital facilities with
2 the exception that existing facilities might not be
3 sprinkler protected.

4 The Committee, therefore, in conjunction
5 with the action that we took for Chapter 18,
6 proposed the same increase in the maximum permitted
7 smoke compartment area from 22,500 square feet to
8 40,000 square feet provided that the building is
9 protected throughout by an improved supervised
10 automatic sprinkler system in accordance with
11 Section 19.3.5.8, which requires quick response to
12 residential sprinklers throughout all smoke
13 compartments containing patient sleeping rooms.

14 The existing 200-foot travel distance
15 requirement from any location to the smoke
16 compartment to a door in the required smoke barrier
17 was also retained. This professional was intended
18 to bring the requirement in Chapter 19 into
19 alignment with the requirements in Chapter 18.

20 Thank you.

21 PRESIDING OFFICER: Thank you, gentlemen.

22 With that, we'll open up debate on the
23 motion. Please provide your name, affiliation, and
24 whether you're speak in support or against the
25 motion.

1 Microphone 1, please.

2 SPEAKER: Thank you. My name is Vickie
3 Lovell, I'm executive director for Fire Safe North
4 America, and speaking in support of the motion.
5 I'm one of the co-proponents.

6 We like to thank the membership for their
7 consideration of our issue and supporting the last
8 motion for new construction, but as it's mentioned,
9 this is now for existing construction.

10 We believe this is actually a more -- even
11 more serious problem that needs to be addressed.
12 We don't disagree with that, but we have to take
13 into consideration the condition of the existing
14 hospitals, and that cannot be done here. It's on a
15 case-by-case basis.

16 If we consider what we're entertaining
17 here, which is the nearly doubling of size of
18 existing smoke compartment, a lot of the questions
19 that has to be asked is what is the condition of
20 the smoke barrier now that's going contain this
21 area, that's going to be the boundary of this area.

22 What we know from statistical information,
23 we know from joint commission reports that it is a
24 constant maintenance concern to keep the integrity
25 of the smoke barrier of all walls intact are

1 properly maintained. It is a big concern. In
2 fact, maintenance to these barriers oftentimes run
3 very high in scoring in terms of problems that need
4 to be addressed. Thankfully in this country we
5 have agencies and backstops in place that can
6 assure that these barriers are maintained, but now
7 in the existing buildings, we are asking that this
8 barrier even almost do double duty in terms of
9 containment size of the compartment. It can't be
10 easily resolved that there is a one size fits all
11 for an existence smoke compartment.

12 Again, we think there are alternatives in
13 designing and configuring the smoke compartment
14 that will be better suited on a performance basis
15 and consideration in each one of the hospitals that
16 want to change the size of the barrier.

17 The 200 travel foot distance is viable.
18 It's workable. But if you have 40,000 square foot
19 compartment, it's going to be very difficult to
20 have good visual supervision of every patient
21 because you can't get -- you can't do it in a
22 square foot compartment. It's going to have to be
23 some odd rectangular different size for every
24 hospital to get that immediate supervision.

25 So, again, we agree that there's probably

1 a reason to go back and revisit this, and there
2 probably is a workable solution that's going to be
3 based on science and practical application and
4 consensus.

5 And we urge you to maintain your votes
6 from the last time. I'd like to pick up a couple
7 more and make it a little clearer, not quite such a
8 close vote, but to really go back and look at this
9 one more time and come up with a good workable.

10 Thank you.

11 PRESIDING OFFICER: Thank you.

12 Microphone 4.

13 SPEAKER: Frank Van Overmeiren, FP&C
14 Consultants. I speak against the motion. Myself
15 and my firm, this issue is actually part of the
16 initial movement of this particular code provision.
17 It actually started as part of an ICC international
18 co-council task group ad hoc effort to try to
19 correlate differences between the ICC code system
20 and the NFPA code system.

21 One 1 of the outstanding efforts that was
22 taken forward by that group was to look at smoke
23 zone size. This is not an arbitral of change.
24 This is looking at both code systems, looking at a
25 package of code requirements that analyze travel

1 distance arrangements, compartmentation, look at
2 fire safety features in the building such as
3 sprinkler systems and fire alarm systems. Look at
4 the new design in existing criteria for both new
5 and existing buildings and how hospitals are
6 utilized.

7 As part of that effort and part of that
8 task group effort, a special task group was
9 assigned to go through and look at this analysis to
10 try to determine base substantiation on what the
11 appropriate smoke zone size should be. Be it
12 22,000, a 30,000 square foot number, a 50,000
13 square foot or some other number.

14 As part of that analysis, multiple
15 architectural and engineering groups went through
16 and provided an exercise to determine the
17 appropriate size for smoke zones. They were tasked
18 with trying to analyze smoke zone size for both
19 patient care floors and clinical floors. All of
20 those groups essentially came down with the same
21 types of recommendations that on upper floors
22 traditional health care facilities where we have
23 our patient sleeping environments, the best
24 arrangements of those spaces, when we look at the
25 utilization of departments -- the patient sleeping

1 rooms, the corridor and circulatory spaces, the
2 nurse stations, the clean and soil utility rooms,
3 the storage spaces, and spaces for support systems
4 such as IT and mechanical spaces.

5 When we look at the arrangements, the
6 given factor was traditional 150-square feet or 200
7 -square feet travel distance arrangements was the
8 given factor. We didn't essentially create larger
9 smoke zone sizes. Where the benefit came from was
10 in lower section of the building that are typically
11 utilized for warehouse, SPD, pharmacy, radiology
12 where we can have unified departments without being
13 subdivided by smoke zones in their arrangements.
14 This was not an arbitrary measure. This has been a
15 longstanding effort looking at research, looking at
16 design material, getting in design professionals to
17 look at this and utilize this as part of the
18 package of design.

19 This information was a very close vote
20 last time and really should be reconsidered by
21 everybody as it relates to existing facilities to
22 give the NFPA membership the appeal that might be
23 submitted for this previous proposal and the
24 Standards Council the information so this can be
25 looked for so we are consistent with what has

1 already been approved by the 2015 Edition of the
2 ICC codes to increase smoke zone size.

3 Thank you.

4 PRESIDING OFFICER: Thank yo.

5 Microphone 5, please.

6 SPEAKER: Tony Crevie representing
7 International Fire Staff Council. Rise in support
8 of the motion.

9 Effectively this represents a 76 percent
10 increase in the size of the smoke compartment. In
11 existing buildings, it's particularly critical
12 because we've already got the smoke barriers and
13 the smoke compartment sizes established in
14 operation paid for and effective. They're in use.
15 This would effectively allow -- if you went -- if
16 you did not support the motion, this would
17 effectively allow you -- if you did not support the
18 motion, this would effectively mean that you could
19 begin to decommission some of the existing smoke
20 barriers and allow all kinds of smoke movements
21 between those without justification.

22 This would also be obviously inconsistent
23 with the action we just took for new buildings, and
24 that's of substantial concern because obviously new
25 building becomes an existing building after some

1 short period of time.

2 I wanted to make a specific point with
3 respect to travel distance. Much has been made
4 about the fact that the travel distance is being
5 maintained at 200. But what we're lacking or what
6 we haven't seen is any modeling or any research
7 that's been done related to egress times. We have
8 to remember that nothing in this proposal gives us
9 any assurance as to the number of patients that
10 will be in those compartments and nothing gives us
11 any assurance as to the staff-patient ratio as far
12 as these proposals are concerned. We've already
13 heard that these codes are used outside of the
14 United States extensively as well.

15 Larger smoke compartment means more doors.
16 More doors mean longer time for the staff to go
17 around and close all of those doors before we begin
18 they egress process. The fact that you've
19 maintained the travel distance at 200 feet doesn't
20 mean that you've maintained the time for egress to
21 the same time that you had in the 22,500 square
22 foot compartment. The 22,500 square foot
23 compartment with the associated fire protection
24 measures has been long-standing and effective, and
25 I urge you to support the motion and be consistent

1 with the action you took on 101-3.

2 Thank you.

3 PRESIDING OFFICER: Thank you.

4 Microphone 6, please.

5 SPEAKER: Yes, Ken Dunkin, Performance
6 Design Technologies. I'm speaking against the
7 motion. I was against the previous motion as well,
8 but whatever we do, we have to be consistent. The
9 last thing we want is an existing hospital that's
10 two years old because we just built it in
11 accordance with one chapter two years ago and now
12 it's out of compliance two years later because one
13 says 40,000 square foot, the other says 22,5.

14 So whatever action we end up taking, they
15 should be consistent so that, once a hospital's
16 built, it isn't automatically in conflict with an
17 existing facility requirement.

18 PRESIDING OFFICER: Okay. Thank you.

19 Microphone 1, please.

20 SPEAKER: I'm Sajid Graza, again
21 (inaudible) in Dubai UAE. Regarding the --

22 PRESIDING OFFICER: Are you speaking in
23 favor or against?

24 SPEAKER: I'm speaking in favor of the
25 motion.

1 PRESIDING OFFICER: Thank you, sir.

2 UNKNOWN SPEAKER: Regarding the existing
3 facilities that the other speakers also mentioned,
4 I would like to find out things which are out of
5 the U.S. Folks have spoken about U.S. Regarding
6 the other countries in the -- worldwide, especially
7 I'm hopeful --

8 PRESIDING OFFICER: Microphone 1 appears
9 to be out. Yeah, just move back to No. 4, please.

10 SPEAKER: Yeah, but I'm not against the
11 motion. I'm speaking in favor of the motion.
12 Okay.

13 Professions would be available for few
14 tragic fires in the hospitals worldwide, one of
15 them being in the hospital in India and the other
16 one being in Russia. And they have been the real
17 tragic death, and this was really because of the
18 compromised or no specified protection.

19 Back to the U.S., which I probably might
20 not have the accurate data as you guys would have
21 here, landmark hospital fires such as one in
22 Virginia in 1994 and in New York in 1993 have been
23 due to compromised fire protection. Most
24 developing countries around the world aren't even
25 yet at the standards where the U.S. was 20 years

1 ago. Keeping these things in mind for the existing
2 facilities, I will really request that the
3 committee that changes should be seriously
4 considered, and the consequences of the proposed
5 changes in other nations worldwide should be
6 seriously looked into.

7 In 101-3 it was one of the speakers who
8 mentioned about the vulnerability of patient. I
9 really like to relate it (inaudible) which says
10 that whoever saves one life it is as if they saved
11 the entire mankind. With this message, I would
12 like to thank and request the Committee to
13 seriously look into this and vote in favor of the
14 motion.

15 Thank you.

16 PRESIDING OFFICER: Thank you very much.
17 Microphone 2, please.

18 SPEAKER: Dan Williams, Washington State
19 Department of Health. I'd like to call to
20 question.

21 UNKNOWN SPEAKER: Second.

22 PRESIDING OFFICER: Okay. We have a
23 motion and a second to call to question. Again,
24 there is a vote to cease debate and go directly to
25 the vote on the proposal, and if you vote one, you

1 are in favor of calling to question and going to
2 the vote. If you vote two, you are not in favor
3 and you wish to continue to debate. Please vote
4 now.

5 Five seconds. Voting is closed.

6 We have 214 in favor upon the question, 31
7 against. That definitely passes two-thirds
8 majority.

9 So before we vote on the item, please let
10 me restate the motion. The motion on the floor is
11 to reject Second Revision No. 124 and any related
12 portions of First Revision No. 482, thereby
13 recommending previous edition text.

14 If you wish to vote in favor of the motion
15 and recommended text on the screen one, press one.

16 If you wish to vote against the motion and
17 recommended the text on screen two, press two.
18 Please record your vote now.

19 Five seconds. Balloting is closed.

20 The results are 144 in favor, 94 against.
21 The motion passes.

22 We'll now proceed with discussion on
23 Certified Amending Motion 101-6.

24 Microphone No. 5.

25 UNKNOWN SPEAKER: Marcelo Hirschler, GBH

1 International for NAFRA, and I move to accept
2 Public Comment No. 8 and No. 9.

3 PRESIDING OFFICER: The motion, this is a
4 group amending motion on the floor to accept Public
5 Comment No. 8 and No. 9.

6 Is there a second?

7 UNKNOWN SPEAKER: Second.

8 PRESIDING OFFICER: I heard a second.
9 Please proceed with discussion on the motion.

10 SPEAKER: Marcelo Hirschler, GBH
11 International, for NAFRA, in favor of the motion.

12 This addresses two simple issues this.
13 The reference is to NFPA 701 textile. I want to
14 give you a little bit of background on this and
15 explain why this is done and give you some
16 background on what's happening in other
17 environments. Until 1999, there was test in NFPA
18 701 is called the small scale test. Fire test
19 committee decided that test was worthless because
20 it didn't predict anything. So they eliminated it.
21 Since then, there is a test called test method one,
22 and there's a test method two. Neither of those is
23 the small scale test.

24 You go on-line and search and purchase
25 fabrics that meet 701, according to what the

1 advertisement says. You test them, and they fail
2 because the meet the small scale test. So this
3 clarifies.

4 I want to emphasize that there were 21
5 references to this NFPA 101. 19 have been revised
6 to the language. There were five referencing NFPA
7 5000 that were revised. There were 17 referencing
8 the IBC. All have been revised. There were 13
9 referencing the IFFC, all have been revised.

10 I urge the committee, I urge the audience
11 to support this and be consistent with all the
12 other references to NFPA 701 and prevent people
13 from misusing the test. Thank you.

14 PRESIDING OFFICER: Thank you.

15 Mr. Koffel, would you like to present the
16 Committee's position?

17 SPEAKER: Thank you, Mr. Chair. While the
18 Correlating Committee did not take any particular
19 action on the public comments, I would offer, upon
20 further review, there is a correlation issue. And
21 in submitter basically just referred to that, and
22 that is, in every other instance in the Code, the
23 terminology or the reference to this test method
24 has been changed to refer to test method one or
25 test method two as proposed in the certified

1 amended motion.

2 Therein, the user or reader of this code
3 wild find two particular instances where the
4 verbiage would be different, and typically, when
5 that happens, one expects that there is some other
6 intent or some other different requirement. I do
7 not believe that that's the intent.

8 With that, I would request that you
9 recognize the chair of the Technical Committee on
10 Mercantile and Business Occupancies, Ken Bush, to
11 address the Committee's perspective.

12 PRESIDING OFFICER: Microphone 2, please.

13 SPEAKER: Thank you, Mr. Chair.

14 Ken Bush, chair of the NFPA 101, Technical
15 Committee on Mercantile and Business Occupancies
16 speaking against the motion.

17 The Committee considers this a proposal
18 and concluded that the wording currently in the
19 code is technically correct and that the proposed
20 wording, as part of this proposal, was not
21 necessary.

22 Thank you.

23 PRESIDING OFFICER: Thank you, gentlemen.

24 With that, we'll open up to debate on the
25 motion. Please provide your name and affiliation

1 and whether you're speaking in support or against
2 the motion. Is there anyone that wish to speak on
3 this?

4 Microphone 5.

5 SPEAKER: Marcelo Hirschler, GBH
6 International for NAFRA just to clarify.

7 PRESIDING OFFICER: You're speaking in
8 favor?

9 SPEAKER: I'm speaking in favor of the
10 motion. This does not change requirements. Just
11 provide clarification and consistency.

12 Thank you.

13 PRESIDING OFFICER: Any further
14 discussion? Seeing none, Mr. Koffel, any final
15 words?

16 UNKNOWN SPEAKER: No, sir.

17 PRESIDING OFFICER: Thank you.

18 Before we vote, let me restate the motion.
19 The motion on the floor is to accept Public Comment
20 No. 8 and 9. If you wish to vote in favor of the
21 motion and recommend the text on screen one, press
22 on.

23 If you wish to vote against the motion and
24 recommend the text on screen two, press 2.

25 Please make your vote now. Five seconds.

1 Voting is closed.

2 The results are 149 in favor, 52 against.

3 Motion passes.

4 Let's now proceed with Certified Amending
5 Motion 101-7.

6 Mr. Scibetta.

7 SPEAKER: My name is Joe Scibetta,
8 speaking on behalf of myself. I rise to make a
9 motion for the acceptance of Public Comment 107.

10 PRESIDING OFFICER: Thank you.

11 There's a motion on the floor to accept
12 Public Comment 107.

13 Is there a second?

14 SPEAKER: Second.

15 PRESIDING OFFICER: I hear a second.
16 Please proceed.

17 SPEAKER: Thank you, Mr. Chairman.

18 Prior to the 2012 edition of NFPA 101,
19 animals were considered storage material and were,
20 therefore, included in the storage occupancy and
21 mentioned again in the storage occupancy chapters.
22 The implication being that animal housing
23 facilities are considered storage occupancies.
24 However, as of the 2012 edition, the reference to
25 animals in the storage occupancy definition and

1 related chapters were removed. That was good
2 decision since animals are not storage material.

3 With the removal of those references,
4 though, where are animal housing facilities
5 addressed or at least implied in the code? This is
6 an important question since humans work in animal
7 housing facilities. The answer is that they are
8 not addressed. And no, you can't even go to the
9 special structure chapters to find them.

10 Animal housing facilities are a unique
11 occupancy type in which humans work, and yet the
12 life safety code, the implied code for human life
13 safety, does not make that recognition.

14 There is a significant level of importance
15 and urgency with this motion because humans who
16 work in animal housing facilities oversee a
17 secondary population that is incapable of
18 self-preservation and is wholly dependent on them
19 for their safety and welfare. Namely, the animals
20 who occupy those facilities.

21 Now, we readily acknowledge this type of
22 guardianship, if you will, with respect to patients
23 with health care staff or inmates with the
24 detention personnel. We need to do the same with
25 animal housing facilities where, likewise, a

1 secondary population exist that is under the
2 guardianship of human caretakers.

3 NFPA 101 must acknowledge and look after
4 the safety of the humans who work in animal housing
5 facilities, as those humans in turn need to look at
6 the secondary population who's welfare in life
7 depends entirely on them. And 101 can make that
8 acknowledgement by referring the reader to
9 NFPA 150.

10 And that is what this motion is calling
11 for, a one-line acknowledgement of the important
12 life safety requirements for humans found in
13 NFPA 150, requirements that the reader of 101 must
14 be made aware of.

15 This motion is not calling for NFPA 101 to
16 include animal life safety within its scope. That
17 has never been the intention nor is it the outcome.
18 This motion is calling for 101 to point the reader
19 to NFPA 150 for the requirements governing the life
20 safety for humans who work within animal housing
21 facilities.

22 I thank you, my fellow members, for your
23 careful consideration of this important motion.

24 PRESIDING OFFICER: Thank you.

25 Mr. Koffel, would you like to offer the

1 Committee's position, please?

2 COMMITTEE CHAIR: Yes, Mr. Chair.

3 I would like to point out three items on
4 behalf of the Correlating Committee. First is the
5 location of this proposed change. It is proposed
6 that the new Chapter 41, which places it in the
7 code between industrial occupancies and storage
8 occupancies. That gives the inference that this is
9 an occupancy classification since we tend to refer
10 to Chapters 12 through 42 as the occupancy
11 chapters, and yet there's been no change
12 correlating change to Chapter 6 relative to
13 occupancy classification.

14 Secondly, throughout the code, there are
15 many references to, as required by or as permitted
16 by Chapters 11 through 42. This chapter will now
17 be in all of those references, and I would offer
18 that the committee that has responsibility for
19 those sections has not looked at whether this would
20 there be appropriate for an animal housing
21 facility.

22 And my last item in relationship to the
23 testimony that we just heard, I would opine that
24 the Life Safety Code does, in fact, provide a
25 reasonable level of protection for the human

1 working in those facilities. It would be
2 classified as an appropriate occupancy
3 classification, and the life safety to those
4 occupancies would be addressed without this
5 revision.

6 With that in mind, I will request that you
7 will recognize a member of the fundamentals
8 committee, Jim Lathrop to address the Committee's
9 perspective.

10 PRESIDING OFFICER: Microphone 2.

11 SPEAKER: Jim Lathrop, Koffel Associates,
12 member of the Fundamentals Committee and speaking
13 in the absence of the chair.

14 Mr. Koffel just actually addressed a lot
15 of the things that I was going to address. One of
16 the things I also want to point out that was
17 discussed in the committee is that document,
18 NFPA 150, is way outside the scope of the Life
19 Safety Code. There are many items in it. It notes
20 it just as a general reference to 150. It doesn't
21 say -- even just say egress in 150. In 150 is
22 actually, believe or not, the sizes of the cages
23 for the animals. That is not something 101 should
24 be referring you to. That would be more
25 appropriately referenced through either the

1 building code or through a fire code.

2 PRESIDING OFFICER: Thank, you gentlemen.

3 With that, we'll open up debate on the
4 motion. Please provide your name, affiliation,
5 and whether you're speaking in support or against
6 the motion.

7 Microphone 1, please.

8 SPEAKER: My name is Joe Scibetta. I'm
9 speaking on behalf of myself in favor of the motion
10 on the floor.

11 NFPA 150 purpose statement is as follows:

12 "The purpose of this statement shall be to
13 prevent the loss of animal life, human life, and
14 property from fire or other emergencies," end of
15 quote.

16 In order to protect both animal and human
17 life, there are unique requirements in 150, one of
18 which is with regard to means of egress, which is
19 differ considerably from 101. Let's use the former
20 classification as a storage occupancy to illustrate
21 this.

22 Maximum travel to distance to an exit, for
23 example, for an ordinary hazard occupancy like a
24 barn or a horse stable with sprinkler protection is
25 400 feet.

1 In NFPA 150, that same distance is
2 100 feet. For ordinary hazard occupancies in 101
3 that are not sprinklers, the distance requirement
4 is 200 feet. In 150, that distance is 75 feet.
5 Why the difference? Is it because of animal life
6 safety alone? No.

7 The annex material in 150 clearly explains
8 the reason for difference when it states exit
9 distances or more stringent than those specified in
10 101 because of the difficulty of evacuating
11 panicked animals from the facility in an emergency
12 situation. In that statement, where does the focus
13 lie? On humans or on animals? The focus lies on
14 humans.

15 Exit travel distances are more stringent
16 in 150 in order to help humans tend to the animals
17 in their care so they both survive. Who is --
18 animal handlers, humans, it is for their sake as
19 much as it is for the animals that means of egress
20 requirements in 150 are unique in 101 as the
21 implied code for human and life safety is
22 obligated. To recognize the unique nature of that
23 document by referring the reader to it. Telling
24 the reader that for animal housing occupancies you
25 must go to NFPA 150 for life safety requirements

1 for humans, some of which you will not find in 101.

2 Does NFPA 150 have the authority to
3 require more stringent requirements in 101? Yes.
4 I quote 150.

5 Where requirements of this standard differ
6 from the adopted fire prevention, life safety and
7 building codes, the requirement of this standard
8 shall governs the protection of the animal
9 occupants and animal handlers.

10 Does NFPA 101 allow this? Yes, I quote
11 101.

12 "Nothing in this code is intended to
13 prevent the use of systems, methods, or devices of
14 equivalent or superior quality strength. Fire
15 resistance effectiveness durability and safety over
16 those prescribed in this code."

17 PRESIDING OFFICER: Thank you.

18 Microphone 5.

19 SPEAKER: Marcelo Hirschler, GBA
20 International, speaking in favor of the motion.

21 I recognize the comments made by Bill
22 Koffel that this may not be in the appropriate
23 order in all chapters. However, that's something
24 that I guess Standards Council or the Correlating
25 Committee could handle as a very simple

1 administrative change. But on the other hand, I
2 think that the reference to that and the awareness
3 and existence of 150 within the NFPA system would
4 be a very useful addition to Life Safety Code.

5 Thank you.

6 PRESIDING OFFICER: Thank you.

7 Microphone 2.

8 SPEAKER: Bill Lathrop, Koffel Associates
9 speaking for myself. Actually --

10 PRESIDING OFFICER: Speaking against the
11 motion?

12 SPEAKER: Speaking against the motion.

13 Actually, the testimony of the supporter
14 actually supports rejecting this because the
15 supporters are saying for the egress, the egress to
16 egress. It doesn't say shall comply the egress
17 requirement to 150. It says it shall comply with
18 150, which is the entire document, which has a lot
19 of things outside the scope -- way outside of the
20 scope of 101. If this is going to go through, it
21 would need to go through with the modification,
22 which we can't do. It needs to be moved. It needs
23 to be moved to a core chapter or maybe even a
24 special structure chapter, or something on that
25 ideal so it's not treated as an occupancy chapter.

1 PRESIDING OFFICER: Thank you.

2 Any further discussion? Microphone 1.

3 SPEAKER: Joe Scibetta speaking on den
4 behalf of myself in favor of the motion on the
5 floor.

6 According to a recent report conducted by
7 the Fire protection Research Foundation, out of the
8 over 300 codes and standards the NFPA Technical
9 Committee is overseeing, only 18 out of those 300
10 contain information and material related to life
11 safety. And by the way, that's life safety for
12 humans. And out of that group of 18, only 12
13 address both fire and non fire hazards relating to
14 human life safety.

15 NFPA 150 is among that unique elite group
16 of 12 life safety documents. 12 documents out of
17 300.

18 Does it not seem logical to you -- does it
19 not seem reasonable that the implied codes for
20 human life safety 101 would reference another life
21 safety standard for humans of such a unique nature
22 as 150? And yet 101 does not. NFPA 101 must not
23 remain silent with respect to humans who work in
24 animal housing facilities. To continue to do so
25 represents an oversight in the code that must be

1 resolved.

2 Interestingly, the following statement is
3 from the NFPA blog posted March 25 of this year. I
4 quote, a featured NFPA 101 makes it so effective is
5 it occupancy based format. Each occupancy chapter
6 of 101 recognizes the characteristics of the
7 occupants and the functional needs of the occupancy
8 and tailors its requirements accordingly, end of
9 the quote.

10 That type of occupancy specific
11 recognition that makes 101 so effective so renown
12 internationally, that type of recognition is not
13 afforded animal housing facilities.

14 This motion is calling for Chapter 41 to
15 do just that. One sentence that directs the reader
16 to 150, thereby recognizing the characteristics of
17 the human occupants that work in animal housing
18 facilities and the functional needs of that unique
19 occupancy type. Such acknowledgement in 101 for
20 NFPA 150 will serve as recognition, not only in
21 150's existence, but much more important than that,
22 its relevance and practical value as a life safety
23 standard for humans.

24 I urge you please to pass this motion.

25 PRESIDING OFFICER: Thank you.

1 Is there any further discussion from the
2 floor on Motion 101-7?

3 Seeing none, Mr. Koffel, any final
4 comments?

5 COMMITTEE CHAIR: Yes, two brief comments.

6 Again, you just heard some testimony about
7 occupancies and this implies this is an occupancy
8 classification without defining this as an
9 occupancy classification. Secondly, there would be
10 a subject of interpretation in that we define in
11 NFPA 101 that, if there is a difference between 101
12 a referenced standard, the requirements of 101
13 takes precedent. With that language, I'm not sure
14 you would get the reduced travel distance that is
15 being proposed here since 101 would give a larger
16 or longer travel distance.

17 PRESIDING OFFICER: Thank you,
18 Mr. Chairman.

19 Before we vote, let me restate the motion.
20 The motion on the floor is to accept Public Comment
21 No. 107. If you wish to vote in favor of the
22 motion, the recommended text on screen one, press
23 one.

24 If you wish to vote against the motion,
25 recommended screen on screen two, press two.

1 Please record your votes now.

2 Five seconds. Balloting is closed.

3 The results are 89 in favor, 126 against.

4 The motion fails.

5 Is there any further discussion on

6 NFPA 101?

7 COMMITTEE CHAIR: Mr. Chair.

8 PRESIDING OFFICER: Yes. I'm sorry. Go
9 ahead.

10 COMMITTEE CHAIR: Before I step down, I
11 would like to recognize the services and
12 contributions of the five Technical Committee
13 chairs, who, due to their term limits, will not be
14 serving in this capacity any further.

15 Warren Bonisch, Chair of Technical
16 Committee on Residential Occupancies; Ken Bush,
17 Chair of Technical Committee on Mercantile and
18 Business Occupancies, Mike DiMascio, Chair of the
19 Technical Committee on Detention and Correctional
20 Occupancies; Jim Lathrop, Chair of the Technical
21 Committee on Means of Egress, and Alex Szachnowicz,
22 Chair of the Technical Committee on Educational and
23 Day-Care Occupancies.

24 I would like to thank those individuals.

25 PRESIDING OFFICER: And thank you, too,

1 Mr. Chairman.

2 (Applause.)

3 PRESIDING OFFICER: We will now move on to
4 the next document. The next report under
5 consideration this morning is out of the committee
6 on building codes. Here to present the Committee's
7 report is Correlating Committee Chair James from
8 San Francisco, California.

9 Committee report that is the first and
10 second draft reports are located on document
11 information page for **NFPA 5000** on the NFPA Web site.
12 The certified amending motions are contained in
13 NFPA Technical Meeting (Tech Session) Agenda and
14 will be displayed behind me on the screen.

15 We'll proceed in the order of the motion
16 sequence number presented.

17 Mr. Cryer, are you ready?

18 SPEAKER: Yes.

19 PRESIDING OFFICER: Go ahead.

20 SPEAKER: Mr. Chair, ladies and gentlemen,
21 the report for all committees is presented for
22 adoption and could be found in the first draft
23 report and the second draft report for the 2014
24 annual meeting revision cycle.

25 The report is consisting of revisions to

1 NFPA 5000 Building Construction and Safety Code
2 were submitted to letter ballot, and the ballot
3 results can be found on the next edition tab of the
4 document information page at www.nfpa.org/5000next.

5 The presiding officer will now proceed
6 with the certified amended motion.

7 PRESIDING OFFICER: Thank you, Mr. Cryer.

8 Let's now proceed with Certified Amending
9 Motion NFPA 5000.

10 Microphone 5, please.

11 SPEAKER: My name is Jeff Shapiro
12 representing the National Multifamily Housing
13 Council. I move to reject Second Revision No. 2,
14 thereby retaining the first draft text.

15 PRESIDING OFFICER: Thank you.

16 The motion on floor is to reject Second
17 Revision No. 2, thereby rejecting first draft text.

18 Do we have second?

19 UNKNOWN SPEAKER: Second.

20 PRESIDING OFFICER: I hear a second.

21 Please proceed.

22 SPEAKER: Jeff Shapiro, National
23 Multifamily Housing Council, in support of the
24 motion.

25 The consequence of this motion is

1 reinstating text that has existed in NFPA 5000 in
2 the 2003, 2006, 2009, and 2012 editions. Passing
3 this motion will also maintain correlation with the
4 International Building Code.

5 To be clear, the underlined text you see
6 on screen one is not new text. It's underlined,
7 but it's not new. That text currently exist in
8 NFPA 5000. The Committee deleted it, and we're
9 asking that you put it back.

10 Why is this issue before you? The text
11 you see on the screen had never been included in
12 NFPA 101. During the first revision process, the
13 Committee -- the Means of Egress Committee proposed
14 to adding this to NFPA 101 to correlate with 5000,
15 and that proposal was accepted.

16 In the second revision process, the Means
17 of Egress Committee reversed course. And they
18 rejected their first revision proposal. That's all
19 fine. I have no issue with that.

20 However, the Committee went then to
21 NFPA 5000 and initiated a second revision to NFPA
22 5000 that deleted the text that you see on the
23 screen long-standing provisions in the code with no
24 technical justification. To be clear, there was no
25 first revisions to NFPA 5000 that the Committee had

1 a legitimate basis to initiate action in the second
2 revision process. This is contrary to the NFPA
3 regulation.

4 And you may recall that yesterday, we had
5 the same issue on Certified Amending Motion 731-1.
6 You approved that motion yesterday, and you should
7 approve this motion as well for consistency.

8 In addition, it's worth pointing out there
9 was no technical basis offered by the Committee for
10 deleting the text. The reason statement says only
11 the provision is in the wrong place in NFPA 5000.
12 That may be a point for debate, but we had no
13 opportunity to engage in that debate because
14 neither I nor the public were aware that the
15 Committee would amend NFPA 5000 on an issue in the
16 second revision process when there was no first
17 revision.

18 In conclusion, for these two reasons, a
19 violation of the procedures by undertaking an
20 entirely new issue in the second revision process
21 for NFPA 5000 and no technical basis offered by the
22 Committee to delete a long-standing provision in
23 NFPA 5000.

24 I ask that you support this motion and
25 that you reinstate the text that the Committee has

1 improperly deleted.

2 Thank you.

3 PRESIDING OFFICER: Thank you.

4 Mr. Cryer, would you like to offer the
5 Committee's position, please?

6 COMMITTEE CHAIR: I would ask that you
7 recognize Jim Lathrop, chair of the Means of Egress
8 Committee.

9 PRESIDING OFFICER: Microphone No. 2.

10 SPEAKER: Jim Lathrop, Chair of the Means
11 of Egress Committee, speaking against the motion.

12 I can't argue with him. There was nothing
13 in the first revision. During the second revision
14 was an attempt to correlate between 101 and 5000.

15 PRESIDING OFFICER: Thank you, gentlemen.

16 With that, we'll open up debate on the
17 floor on the motion. Please provide your name,
18 affiliation, and whether you're speaking in favor
19 or against the motion.

20 Microphone 5.

21 SPEAKER: Marcelo Hirschler, GBH
22 International, speaking for myself in favor of the
23 motion.

24 There is exactly what we had yesterday.
25 There is a violation of the rules. We have to vote

1 in favor of the motion.

2 PRESIDING OFFICER: Thank you.

3 Microphone 3, please.

4 SPEAKER: Ed Collins, Architect with the
5 Preview Group, Cincinnati, Ohio, member of the
6 Means of Egress Committee on behalf of American
7 Institute of Architects, speaking in favor of the
8 motion.

9 We messed up. Please fix it.

10 PRESIDING OFFICER: That was succinct.

11 Microphone 1, please.

12 SPEAKER: Steve (inaudible) National
13 Association of Homebuilders, speaking in favor of
14 the motion before you.

15 If this Committee is to approve this
16 motion, what you will do is save us time without
17 having to go to the Standards Council to go for the
18 procedural problems that we've already stated that
19 occurred with this proposal.

20 Please approve.

21 PRESIDING OFFICER: Thank you.

22 Microphone 5.

23 SPEAKER: Marshall Klein Fire Protection
24 Engineer, Eldesburg, Maryland, representing
25 International Multifamily Housing Council, speaking

1 in support of the motion.

2 Ladies and gentlemen, we were the original
3 submitters of this proposal which speaks to open
4 sprinkler breezeway provisions in the 5000 Code.

5 The intent originally back in 2000, 2003,
6 when the building code was originally drafted was
7 to correlate the 5000 Building Code with the other
8 modeled building codes in the United States.

9 We worked with the Means of Egress
10 Committee on this particular placement of these
11 provisions. They were satisfied. The wording was
12 approved for years and correlates with the IBC
13 requirements which are almost identical, similar.

14 The provision have been in both NFPA 5000
15 for its beginning cycles and fore cycles, and it's
16 also in the IBC, in the first IBC draft in 2000.

17 There's been thousands of projects built
18 over the years using these provisions in their safe
19 sprinkler buildings with open breezeways. The two
20 reasons to support the motion has been already
21 stated. Basically, there was no adequate
22 justification to take this out of the code during
23 the second draft, and it violates the (inaudible)
24 only in the second draft not in the first draft.
25 To allow us to comment on it, it violates the NFPA

1 Committee Regs, which, as we stated, Motion 731-1
2 was approved for the exact same reasons.

3 Please support the motion on the floor by
4 pressing number one on the recording device system.

5 Thank you.

6 PRESIDING OFFICER: Thank you.

7 Is there any further discussion on
8 Motion 5000-1, reject Second Revision No. 2?

9 Mr. Chair, any final comments?

10 COMMITTEE CHAIR: No. Thank you.

11 PRESIDING OFFICER: All right. Before we
12 vote, let me restate the motion.

13 The motion on the floor is to reject
14 Second Revision No. 2, thereby retain first draft
15 text.

16 If you wish to vote in favor of the motion
17 and recommend the text on screen one, press one.

18 If you wish to vote against the motion and
19 recommend the text or lack of text on screen two,
20 press two. Please record your votes now.

21 Five seconds. Balloting is closed.

22 Results are 167 in favor, 37 against.

23 Motion passes.

24 We will now move on to Certified Amending
25 Motion 5-2. Mr. Frable? Am I missing you

1 somewhere?

2 This motion appears on the agenda;
3 however, the authorized maker is not present.
4 Therefore, in accordance to the NFPA rules, the
5 motion may not be considered by the assembly. It
6 is removed from the agenda.

7 We will now move on to 5000-3.

8 Microphone 5, please.

9 SPEAKER: I'm Kelly Nicolello, State Fire
10 Marshal for Alaska representing the National
11 Association of State Fire Marshals. I'm in favor
12 of the Motion 5000-3, rejecting second revision to
13 115 and any related portions of related First
14 Revision No. 434, thereby recommending previous
15 edition text.

16 PRESIDING OFFICER: There is a motion on
17 the floor to reject Second Revision 115 and any
18 related portions of related First Revision No. 434,
19 thereby recommending previous edition text.

20 Is there a second?

21 UNKNOWN SPEAKER: Second.

22 PRESIDING OFFICER: I hear a second.
23 Please proceed.

24 SPEAKER: I'm Kelly Nicolello, Fire
25 Marshal, Alaska, representing National Association

1 of State Fire Marshals.

2 This body has taken action on new
3 construction in 101 and existing construction in
4 101 regarding smoke compartment size. This is the
5 exact same issue except it exists in NFPA 5000 for
6 new construction.

7 We would ask that you vote consistently
8 for all the same reasons mentioned before. I'm not
9 going to go back into previous testimony and would
10 ask you to support this motion.

11 Thank you.

12 PRESIDING OFFICER: Thank you.

13 Mr. Chairman, any comments?

14 COMMITTEE CHAIR: Yeah, there are no
15 correlation issues within this standard. There is
16 a correlation issue now with 101 that the group
17 should consider, but beyond that, I would ask that
18 you recognize Dave Klein, chairman of the Committee
19 on Health Care.

20 PRESIDING OFFICER: Microphone No. 2,
21 please.

22 SPEAKER: Thank you, Mr. Chair.

23 David Klein, Department of Veterans
24 Affairs, the chair of the Technical Committee on
25 Health Care Occupancies.

1 As mentioned, the issues associated with
2 this certified amending motion are similar to
3 issues associated with 101-3, which applied to
4 Chapter 18 of NFPA 101.

5 Thank you.

6 PRESIDING OFFICER: Thank you, gentlemen.

7 With that, we'll open up debate on the
8 motion. Please provide your name, affiliation,
9 whether you're speaking for or against the motion.

10 Microphone 1, please. Microphone 2.

11 SPEAKER: Don Williams, Washington State,
12 Department of Health.

13 While I state against this motion, giving
14 the testimony -- and I appreciate the proponent's
15 comments about not rehashing testimony -- I'd like
16 to call to question.

17 PRESIDING OFFICER: Motion to move to
18 question. Is there a second? I hear a second.
19 This will cease debate. We'll be voting on whether
20 moving to question or not. If you are in favor of
21 moving to question and going directly to the vote,
22 press one.

23 If you are against moving to question and
24 going directly to the vote, press two.

25 Please vote now. Five seconds. Voting's

1 closed.

2 We have 171 in favor of moving to
3 question, 24 against. The motion passes. We will
4 go directly to the vote.

5 Before we vote, let me restate the motion.

6 The motion on the floor is to reject
7 Second Revision No. 115 and any related portions of
8 related First Revision No. 434, thereby
9 recommending previous edition text.

10 If you wish to vote in favor of the motion
11 and recommend the text on screen one, press one.

12 If you wish to vote against the motion and
13 recommend the text on screen two, press two.

14 Please vote now.

15 Five seconds. Voting is closed.

16 Results are 130 in favor, 66 against.

17 Motion passes.

18 Now let's proceed with discussion of
19 Certified Amending Motion 5000-4.

20 Microphone 5, please.

21 SPEAKER: Marcelo Hirschler, GBA
22 International, on behalf of NAFRA. I move to
23 accept public comment No. 25.

24 PRESIDING OFFICER: The motion on the
25 floor is to accept Comment No. 25.

1 Do I have a second?

2 UNKNOWN SPEAKER: Second.

3 PRESIDING OFFICER: We have a second.

4 Please proceed.

5 SPEAKER: Marcelo Hirschler, GBA
6 International, for NAFRA in support of the motion.

7 This is the exact same issue we discussed
8 a few minutes ago on 101. Just to remind you to
9 make sure that there is the appropriate reference
10 of test method one or test method 2 is appropriate
11 in NFPA 701.

12 And as I pointed out before, all the IBC,
13 IFC, NFPA 101 changes have been done. There is
14 only one change remaining. That's this one NFPA
15 5000.

16 I urge you to support this, and approve
17 the motion.

18 Thank you.

19 PRESIDING OFFICER: Thank you.

20 Mr. Chairman, would you like to offer the
21 Committee's position?

22 COMMITTEE CHAIR: I would concur that this
23 is the same issue with 101. I also believe it does
24 create a correlation issue for the same reasons
25 Bill Koffel mentioned earlier.

1 Having said that, I would ask that you
2 recognize Ken Bush, Chairman of Mercantile and
3 Business Committee.

4 PRESIDING OFFICER: Microphone 1. Go
5 ahead.

6 SPEAKER: Ken Bush speaking against the
7 motion as the chair of NFPA 5000 Mercantile and
8 Business Committee.

9 Once again, as the issue was with NFPA
10 101, the Technical Committee felt this morning was
11 unnecessary and that the existing wording was
12 technically correct.

13 PRESIDING OFFICER: Thank you, gentlemen.
14 With that, we'll open up debate on the
15 motion. Please provide your name and whether you
16 speaking for or against the motion.

17 Any input from the floor at all? Seeing
18 none, Mr. Chair, anything final?

19 COMMITTEE CHAIR: No.

20 PRESIDING OFFICER: Okay. We will move to
21 a vote. Before we vote, let me restate the motion.

22 The motion on the floor is to accept
23 Public Comment No 25. If you wish to vote in favor
24 of the motion and recommend the text on screen one,
25 press number one.

1 If you wish to vote against the motion and
2 recommend the text on screen two, press number 2.
3 Please vote now.

4 Five seconds. Balloting is closed.

5 The results are 140 in favor, 38 against.
6 Motion passes.

7 Let's now proceed with Certified Amending
8 Motion 5000-5. Mr. Frable? You want to make thea
9 motion, Mr. Fable? Oh, okay.

10 The motion appeared on the agenda.
11 However, the authorized maker does not want to
12 pursue it; therefore, in accordance with NFPA
13 rules, the motion may not be considered by the
14 assembly and will be removed from the agenda.

15 We will move on to 5000-6. As soon as I
16 get there in my book. Oh, I'm sorry. That's it.

17 Any final comments?

18 COMMITTEE CHAIR: Yes, I'd like to make
19 the final comment.

20 In addition to five committee chairs
21 reference to by Bill Koffel, and those chairs
22 severed both the 5000 committee and the NFPA 101,
23 there are two other chairs that serve the only the
24 building code committees will be stepping down.
25 They are Joe Versteeg, Chair of Technical Committee

1 Building Construction, Pete Willse, Technical
2 Committee on Structures Construction and Materials.

3 So I ask the group to please thank them as
4 well as the other five retiring chairs at this
5 time.

6 (Applause.)

7 PRESIDING OFFICER: Since I can't count,
8 I'll have to say this officially concludes this
9 portion of the 2014 NFPA Technical Meeting.

10 I want to thank you all for your
11 participation, interest, and support.

12 I now declare this part of the meeting
13 officially closed.

14

15 (TIME NOTED: 12:08 P.M.)

16

17

18

19

20

21

22

23

24

25

1 I, the undersigned, a Certified Court
2 Reporter of the State of Nevada, do hereby certify,

3 That the foregoing proceedings were taken
4 before me at the time and place herein set forth;

5 That any witnesses in the foregoing
6 proceedings, prior to testifying, were duly sworn;

7 That a record of the proceedings was made
8 by me using machine shorthand which was thereafter
9 transcribed under my direction;

10 That the foregoing transcript is a true
11 record of the testimony given.

12 Further, that before completion of the
13 proceedings, review of the transcript [] was [X]
14 was not requested.

15 I further certify I am neither financially
16 interested in the action nor a relative or employee
17 of any attorney or party to this action.

18 IN WITNESS WHEREOF, I have this date
19 subscribed my name:

20

21 Dated: 07/01/2014

22

Kimberly M. Lowe

23

CCR No. 849

24

25

0	101-1 80:17 84:5 87:21 89:8 90:6	137:11 155:6 168:9 168:13,19 170:18	70:20 71:5 84:21,23 98:19 100:2 106:9	
0 54:1 07/01/2014 195:21	101-2 91:3,7,23 94:8 101-3 115:3,7 158:1 160:7 189:3	170:20,21,21 171:11,17 172:1,4,7 172:16,20,25 173:2 173:4 174:3,17,18 175:15,22 176:16 176:20	108:24 125:14 132:14 134:5 137:16 141:23 145:9 149:17 160:17 164:12 165:24 170:10 174:7 180:13,17 183:9 186:8,14 188:20 189:10 191:10 193:2	
1	101-4 139:16,22 146:4 101-5 146:24 147:4 101-6 161:23 101-7 166:5 177:2 104 139:22 107 166:9,12 177:21 11 8:3 94:20 95:19 104:12 169:16 11-12 4:7 5:17 12:2 1144 74:15,17 115 187:13,17 190:7 117 139:23 140:4 146:9 118 139:25 140:6 146:11 12 1:15 2:1 35:8,13 36:13 37:2 49:8,18 61:24 135:2 169:10 175:12,16,16 121 139:13 123 115:8,12 139:4 124 147:5,9 161:11 126 16:20 178:3 129 139:13 12:08 194:15 13 54:1 61:18 163:8 130 190:16 132 71:16 14 8:3 135:2 140 193:5 144 161:20 147 67:10 149 166:2 15 8:12 25:14 30:9 101:18 127:7 150 81:11 82:14 83:1,21,25 85:5 87:7,16 88:4 90:2 117:1 130:13	150's 176:21 154 146:21 156 34:24 157 114:25 160 90:25 162 77:18 167 186:22 16732-1 116:4 17 163:7 171 136:1 190:2 18 5:13 58:5 143:12 150:5,19 175:9,12 189:4 18.3.7.1 150:1 1838218 1:24 187 50:3 19 143:13 150:18 163:5 19.3.5.8 150:11 19.3.7.1 149:23 1934 82:1 197 56:19 1985 29:13 1988 30:3,7 1990 82:12 1992 82:13 1993 159:22 1994 159:22 1996 82:12 1999 162:17	150's 176:21 154 146:21 156 34:24 157 114:25 160 90:25 162 77:18 167 186:22 16732-1 116:4 17 163:7 171 136:1 190:2 18 5:13 58:5 143:12 150:5,19 175:9,12 189:4 18.3.7.1 150:1 1838218 1:24 187 50:3 19 143:13 150:18 163:5 19.3.5.8 150:11 19.3.7.1 149:23 1934 82:1 197 56:19 1985 29:13 1988 30:3,7 1990 82:12 1992 82:13 1993 159:22 1994 159:22 1996 82:12 1999 162:17	2,000 135:2 2.7 17:9 21:18 22:7 50:17,20 20 6:24 19:1 72:16 73:5 91:7,13 114:15 126:14 134:18 159:25 200 117:3 120:17 126:1 127:5,10 130:15 131:4,8 150:14 152:17 155:6 157:5,19 172:4 2000 185:5,16 2002 20:12 2003 181:2 185:5 2004 26:16 97:6 2006 181:2 2009 136:5 181:2 2011 136:19 2012 20:12 82:17 135:23 143:24 145:15 166:18,24 181:2 2013 5:4,5,13,14 2014 1:15 2:1,10 4:7 4:14 5:6,6,14,15,17 6:25 8:3,16 12:2 18:21 23:15 26:1 51:21 57:22 80:3 179:23 194:9 2015 34:3 156:1
		2		
		2 13:12 28:3 33:11 39:2 43:18 47:8 49:24 58:17 59:1 60:10 61:23 63:22 66:12,23 67:19,24		

[21 - 7.13.1]

<p>21 163:4 214 161:6 21st 131:15 22 91:9,14 114:16 22,000 154:12 22,5 134:25 135:6 149:3 158:13 22,500 115:22 117:1 117:2 119:19 120:21 121:15 127:11 130:11,19 148:10 150:7 157:21,22 222 114:10 225 127:11 23 5:4 91:10,15 114:17 24 19:1 91:10,14 114:17 190:3 25 11:5 16:4,9 18:6 18:21,24 19:1,3 25:8 83:14 143:11 176:3 190:23,25 192:23 250 136:19 26 93:13 122:2 2768 74:14 75:20,21 76:8 278 82:15 29 8:16 23:20 56:21</p>	<p>32 22:10 343 106:4 35 100:10,13 132:22 36 114:10 130:11 37 186:22 38 84:12 193:5 39 84:12</p>	<p>400 171:25 41 169:6 176:14 42 169:10,16 427 115:9,13 139:5 434 139:24 140:5 146:10 187:14,18 190:8 47 100:16 482 147:5,10 161:12 486 140:1,7 146:12</p>	<p>5000-3 187:7,12 5000-4 190:19 5000-5 193:8 5000-6 193:15 5000next 180:4 5000on 179:11 52 166:2 53 50:4 54 23:4,18 24:3 25:20 27:16 28:12 29:2 34:5 50:8 54-1 34:12 54-2 35:3 49:8 540 139:24 140:5 146:10 54next 23:23 55.1 116:2 57 53:23 572 140:1,7 146:12 59 17:7 22:1,1 34:23</p>
	4		
	<p>4 5:14 64:20,24 71:23 72:2 76:25 77:8 80:18,22 90:8 90:18 133:3 134:14 153:12 159:9 4,000 92:4 95:25 97:20,23 98:5,6 149:4 4,001 92:19 4.1.1 59:4 61:21 62:17 65:22 4.1.1.1 61:17 69:2 4.1.1.1.1 58:19 60:10 61:22 66:14,25 69:4 75:14 4.1.1.1.1.1 58:24 59:5 4.1.1.1.6 63:13 4.1.1.6 59:4 64:4 66:14,25 69:17 4.1.1.7 58:19 59:4 66:14 67:1 69:17 4.2.6 7:7 4.2.6.1 7:5 4.5.3 6:20 4.5.3.7 21:18 50:20 4.5.3.7b 6:8 4.6 6:20 4.7 6:15,21 40,000 115:23 117:4 117:12 118:8 120:15,20 121:14 121:17 122:17,22 123:19 124:3 125:6 130:17 131:11,11 133:4 148:13 150:8 152:18 158:13</p>	5	
		<p>5 46:11 48:15 52:8 52:18,25 54:10 56:10 58:13 59:13 60:13,17,18 63:25 64:21,23 65:1 66:3 67:15 68:7,15,16 69:23 70:3 71:20 75:16 76:3 80:14 86:20 87:24 89:9 91:4 100:1 102:10 103:15 107:8 111:10 115:4 121:4 127:16 133:13 135:15 139:18 146:25 156:5 161:24 165:4 173:18 180:10 183:20 184:22 187:8 190:20 5-2 186:25 50 25:15 78:22 81:13 83:13 87:13 50,000 154:12 5000 72:19 76:10 128:5 132:12 163:7 180:1,9 181:1,8,14 181:21,22,25 182:11,15,21,23 183:14 185:4,7,14 188:5 191:15 192:7 193:22 5000-1 186:8</p>	
			6
			<p>6 31:4 59:16,21 60:22 62:8 65:14 69:13 74:10 75:5 76:14 83:14 96:7 104:24 108:2 112:20 121:24 130:5 158:4 169:12 6,240 135:23 600 136:10 6000 15:16,24 6000-1 15:16,17,19 16:6 6000-2 15:19 65 77:17 146:21 66 190:16 68 35:9,14 49:9,19 69 35:9,14 49:10,19</p>
			7
			<p>7 5:6 84:14,16 92:2 93:12 94:19 95:2 101:19 143:17 7.13.1 24:19</p>

[7.13.2 - advisory]

<p>7.13.2 24:14 70 25:21 33:18,19 50:21 701 162:13,18,25 163:12 191:11 703 57:10,25 58:12 62:25 64:20 73:9 703-1 58:22 66:11 68:23 69:16 703-2 58:22 70:19 703-3 71:19 76:24 703next 58:7 70e 17:6 50:13 7132 94:22 72 24:23 34:13,17 67:9 720 21:14 73-2 67:14 731 106:21 111:20 731-1 182:5 186:1 74 71:14 75 172:4 76 156:9</p>	<p style="text-align: center;">a</p> <p>a.m. 2:2 ability 26:3 45:9 122:14 able 28:12 43:2 107:23 113:9 118:8 118:9 122:16 127:3 149:3 absence 95:11 170:13 absolute 132:25 absolutely 64:16,18 144:22 absurd 48:21 accept 16:3,8 24:22 34:12,16 47:6 52:12 52:15 71:22 72:1 76:24 77:7 84:5 90:1 94:8 139:22 162:1,4 165:19 166:11 177:20 190:23,25 192:22 acceptable 104:17 acceptance 30:6 103:25 166:9 accepted 7:1 30:4 39:14 181:15 access 14:4 81:22 accessible 143:20 accorded 11:7 accountable 41:17 42:4 122:21 accumulative 117:25 accurate 159:20 achieve 18:20 achievement 17:16 17:21,25 19:14,17 acknowledge 20:18 167:21 168:3 acknowledged 133:13 acknowledgement 168:8,11 176:19</p>	<p>act 4:18 10:9 89:23 acted 6:12 action 5:1 6:11,14 6:22 8:9,12 12:11 21:22 50:24 58:23 63:21 84:14 89:23 89:24 99:3 109:15 149:1 150:5 156:23 158:1,14 163:19 182:1 188:2 195:16 195:17 actions 4:16 6:5 99:22 109:16 activate 93:5 activation 18:24 active 18:6 110:23 116:13 activities 18:10 19:4 actual 14:23 15:5 78:18 85:14 88:6 138:3 142:14 ad 153:18 ada 28:10 add 24:14 41:4 47:21 53:24 132:17 144:4 added 14:22 38:8 118:18,20 140:17 adding 61:21 69:4 181:14 addition 27:11 74:1 81:12 86:2 104:13 120:4 128:6 132:23 133:19 174:4 182:8 193:20 additional 20:16 24:15 26:1 44:8 56:3 81:21 106:13 129:8 144:6 145:2 additionally 5:25 19:1 address 11:23 13:1 28:12 33:1,25 38:16 44:11,24 47:15,18 48:10 61:22 68:12</p>	<p>69:4 84:22 85:25 95:8 106:13 119:5 141:21 149:15 164:11 170:8,15 175:13 addressed 30:13 37:15,16 42:20 118:19 129:1 151:11 152:4 167:5 167:8 170:4,14 addresses 162:12 addressing 53:25 112:23 129:19 adequate 185:21 adjunct 99:19 adjustment 123:25 administrating 125:17 administration 80:16 81:5 86:22 91:6,22 103:17 111:12 administrative 174:1 admitted 124:4 adopt 29:2 44:13 105:22 adopted 45:19 173:6 adoption 23:13 34:3 51:19 57:21 80:1 179:22 adopts 104:11 adult 136:20 advance 16:25 83:4 advanced 14:3 advancement 73:25 advantage 26:18 60:2 127:4 advantages 25:17 adverse 132:8 advertisement 163:1 advisory 101:16 109:5 110:13</p>
<p style="text-align: center;">8</p>	<p>8 18:10 162:2,5 165:20 82 16:19 849 1:23 195:23 89 90:25 178:3 8:00 2:2</p>		
<p style="text-align: center;">9</p>	<p>9 3:12 162:2,5 165:20 9-11 105:18,23 9.3 36:13 37:1 9.33 88:13,14 90 12:5 91 12:5 94 114:25 161:20 99 51:10,22 52:7 56:24 99-1 52:12,16 55:6 99next 52:1</p>		

[affairs - appropriate]

<p>affairs 119:9 142:1 149:20 188:24</p> <p>affect 119:21 145:23</p> <p>affiliation 9:14,16 27:25 38:24 54:7 62:5 69:10 74:8 86:17 96:4 121:1 143:2 150:23 164:25 171:4 183:18 189:8</p> <p>affirmative 61:19 61:24</p> <p>afford 134:1</p> <p>afforded 176:13</p> <p>afraid 141:9</p> <p>aga 36:4</p> <p>agencies 152:5</p> <p>agency 24:16 140:18</p> <p>agenda 4:4,7 5:17 12:1,2 14:14,21 17:11 21:15 22:2,8 23:6 50:13,19 51:12 57:12 79:19 94:13 179:13 187:2,6 193:10,14</p> <p>agent 10:9</p> <p>ages 61:2</p> <p>ago 25:13 29:14 30:8,9 73:15 100:10 100:13 101:3 110:7 126:14 129:11,18 129:20 130:20 158:11 160:1 191:8</p> <p>agree 16:18 36:5 44:25 47:5,23 49:2 123:15 144:25 152:25</p> <p>aha 103:23</p> <p>ahead 84:24 178:9 179:19 192:5</p> <p>ahj 93:4 113:2 141:5 142:8 144:7,18</p> <p>aimed 145:24</p> <p>air 36:15,19 38:7,11 39:21 40:15,19,20</p>	<p>40:20 42:14,17,22 44:4 46:3 48:8,11 48:16 112:21 122:5 135:16 136:24</p> <p>airflow 48:18</p> <p>alarm 3:2 154:3</p> <p>alarms 122:9 136:2</p> <p>alaska 115:6 147:2 147:17 187:10,25</p> <p>alex 178:21</p> <p>alignment 150:19</p> <p>allen 89:10</p> <p>allotted 11:17,20</p> <p>allow 53:25 54:18 122:19 131:12 148:12,21 156:15 156:17,20 185:25</p> <p>allowable 6:6 115:21 128:5</p> <p>allowed 3:16 5:25 30:4 122:22 148:7 149:5</p> <p>allowing 31:11 39:15,16</p> <p>allows 63:14 94:23 107:13 173:10</p> <p>altered 36:17 45:4</p> <p>alternate 72:21</p> <p>alternatives 152:12</p> <p>ambiguity 102:22</p> <p>amend 6:17 182:15</p> <p>amended 25:25 58:12 164:1 180:6</p> <p>amending 4:3,10 5:12,18,21,22,24 6:6 7:6,18 9:10 11:25 12:12,15,17 14:3 21:16 23:5,25 24:3,7,13 25:5 35:3 51:11 52:3,7,16 57:11 58:9 67:14 71:19 79:18 80:10 80:13 91:3,12 115:3 126:21 139:16 140:3 141:19</p>	<p>146:24 161:23 162:4 166:4 179:12 180:8 182:5 186:24 189:2 190:19 193:7</p> <p>amendment 7:1,4 25:18 26:19 27:2 33:5,9 123:5 139:22</p> <p>america 123:4 151:4</p> <p>american 28:5 33:12 39:4 43:19 47:9 101:20 184:6</p> <p>amount 109:21</p> <p>ample 105:19</p> <p>analysis 18:17 93:15 116:17,22 117:24 118:21,25 148:16 154:9,14</p> <p>analyze 153:25 154:18</p> <p>anecdotal 89:11,16</p> <p>anesthesia 137:5</p> <p>angie 127:18</p> <p>animal 166:22 167:4 167:6,10,16,25 168:4,16,20 169:20 171:13,16 172:5,18 172:24 173:8,9 175:24 176:13,17</p> <p>animals 166:19,25 167:2,19 170:23 172:11,13,16,19</p> <p>annex 35:10,15 37:10 43:7 44:1 49:11,20 85:24 91:8 91:16 93:1 95:3 104:3 114:18 140:8 141:4 142:21 146:14 172:7</p> <p>announcement 3:5</p> <p>announcements 78:7</p> <p>annual 5:6,15 23:15 51:21 57:23 80:3 179:24</p>	<p>answer 118:9 167:7</p> <p>answers 125:11</p> <p>anticipating 116:8</p> <p>antifreeze 18:25</p> <p>aon 18:2</p> <p>apologize 65:5</p> <p>app 3:12 4:6 12:3</p> <p>appeal 6:22 7:3 155:22</p> <p>appear 11:18</p> <p>appeared 21:15 22:2 50:13 82:1 84:12 148:8 193:10</p> <p>appears 116:6 159:8 187:2</p> <p>appendix 74:14</p> <p>applause 18:4 19:6 19:15 22:17 179:2 194:6</p> <p>appli 28:14</p> <p>appliance 36:15,19 38:3,9 39:19 40:6 40:14,23 41:1,1 44:2 46:3</p> <p>appliances 38:17 39:17 40:2,9 42:3 42:15,18 53:12,15 53:15</p> <p>applicable 14:18</p> <p>application 97:17 106:25 153:3</p> <p>applications 106:18</p> <p>applied 63:6 189:3</p> <p>applies 111:20</p> <p>apply 63:9 73:12 95:20,21 98:16 120:16 132:12</p> <p>appointed 5:9</p> <p>appreciate 118:9 122:18 189:14</p> <p>appreciation 19:23</p> <p>approaching 72:21</p> <p>appropriate 10:3 11:11,15 74:25 107:15 120:14,21</p>
--	---	--	--

[appropriate - background]

<p>124:1 125:5 130:1 154:11,17 169:20 170:2 173:22 191:9 191:10 appropriately 170:25 appropriateness 82:19 approval 33:8 92:23 approve 24:12 27:1 92:4 103:24 129:23 182:7 184:15,20 191:16 approved 11:4 22:11 24:16 25:13 26:19,23 33:1 72:23 85:12 106:20 117:13 126:10 156:1 182:6 185:12 186:2 april 5:14 arbitral 153:23 arbitrary 124:6,6 130:18,18 155:14 arbitration 124:21 arc 24:15 26:2,6 28:21 29:3 31:24 architect 130:7 184:4 architects 184:7 architectural 144:19 154:15 architecture 130:7 arcing 26:4 area 9:2 88:22 98:14 110:24 119:17 120:15,20 121:21 133:12 142:14 150:7 151:21,21 areas 45:11 85:24 86:6,7 88:5,13 89:1 92:25 99:7 133:6 134:22 135:4 143:14 145:20,20 147:24 148:22</p>	<p>argue 106:8 183:12 argued 117:15 arguing 105:15,19 argument 105:3 arguments 78:16 101:14 arranged 143:19 arrangements 3:8 154:1,24 155:5,7,13 arrive 125:4 arrived 124:4 art 113:16 asg 135:19 ashrae 48:19 asked 4:17 13:14 151:19 asking 117:14 125:1 140:18 152:7 181:9 asks 9:12 aspect 28:11 40:17 97:15 aspects 128:25 assembly 22:8 50:18 187:5 193:14 assess 11:11 129:18 assessment 30:19 116:1 assessments 115:25 116:3 asset 20:25 assign 108:9 assigned 21:13 154:9 assignments 108:9 assist 2:12 99:19 assistance 79:7 assistant 2:20 assisted 18:22 associate 2:19 associated 157:23 189:1,3 associates 20:24 57:6 79:13 95:9 107:10 113:17 145:10 170:11</p>	<p>174:8 association 1:9 6:23 8:21 11:10 21:9 28:5 33:13 35:6,25 39:4 43:20 44:22 47:10 96:10 101:21 105:1 108:4 115:19 121:6 127:19,21,23 128:4,22,23 147:3 147:17 184:13 187:11,25 assumed 133:8 assumes 117:6 assuming 121:13 assumptions 116:7 assurance 157:9,11 assure 106:1 152:6 astm 72:13,14,15 73:6,10,12,13,13,24 74:14 astounds 111:5 attached 96:23 attack 97:4 attempt 183:14 attempting 47:14 48:2 attempts 142:4 attendance 129:3 attending 11:3 attention 3:17,21 attic 39:19 attorney 195:17 audience 64:3 94:11 163:10 audio 3:15 august 5:4 8:3,16 austin 20:6 author 48:17 authority 107:18,18 125:16 143:10 144:3,10,13,14,24 173:2 authorized 10:9 17:6 22:2 50:14,14 187:3 193:11</p>	<p>automatic 110:1 119:22 130:21 150:10 automatically 9:9 158:16 availability 38:6 available 4:1 5:22 6:7 8:10 12:3,8 14:7 29:1 79:3 85:21 118:22 119:1 129:17 136:13 142:8 159:13 average 135:23 avoids 70:13 award 17:21,25 18:1 19:5,7,14,17 19:19,25 20:3,17 awards 17:16,17 19:18 21:7 aware 10:7 13:6 33:23 34:1 36:11 41:16 42:13 141:18 168:14 182:14 awareness 37:25 99:8 100:17,18,21 101:4,24 107:4 174:2</p>
			b
			<p>b 94:22 back 13:17 21:8 37:14,17 40:7,11,25 61:3 63:16 65:9 70:15 79:3 83:8 88:4 97:4 103:2 111:3,24 117:14 118:8 124:25,25 125:10 126:23,23 127:6 141:9 153:1,8 159:9,19 181:9 185:5 188:9 background 29:23 81:8 91:23 109:8 162:14,16</p>

[backstops - business]

<p>backstops 152:5 badges 8:21,23 badly 100:6 balanced 132:24 ballot 7:2,4,6 23:19 23:21 51:24,24 58:4 58:5 80:6,6 180:2,2 balloting 16:17 34:22 50:1 56:17 67:7,8 71:12,13 77:14,15 90:24 93:12 139:12 146:20 161:19 178:2 186:21 193:4 ballroom 3:10 bar 116:15 barbara 86:10 barn 171:24 barrier 120:19 126:4 150:16 151:20,25 152:8,16 barriers 152:2,6 156:12,20 base 121:20 154:10 baseboard 48:23 based 6:22 8:5 18:8 18:13 48:6 81:16 85:6 86:23 87:14,15 94:2 100:9 104:16 116:7 124:6 128:7 128:19 129:14,21 130:12 134:6 138:4 148:16,25 153:3 176:5 basic 61:6 basically 31:9,11 33:6 87:14 163:21 185:21 basis 107:21 116:6 132:9 151:15 152:14 182:1,9,21 basket 117:23 battle 140:22 bay 1:13</p>	<p>beauty 86:10 bechtel 20:22 beginning 10:4 47:18 185:15 behalf 10:10,12 21:4 52:10 53:5 127:20 137:18 139:20 140:15 166:8 169:4 171:9 175:4 184:6 190:22 beige 8:22 believe 29:1 37:15 75:23 83:23 94:3 104:15 118:10,21 122:19,21 124:13 126:6 151:10 164:7 170:22 191:23 believes 117:4 126:18 belimo 48:16 bell 2:15 11:17 17:13,19 19:7 20:16 20:25 21:4 bellis 2:16 17:14 18:5 20:5,20 belongs 36:25 beneficial 105:4,12 benefit 14:22 105:8 155:9 benefits 120:2 berry 19:16 best 132:17 154:23 better 102:5 108:12 108:20 129:16 144:11 152:14 beyond 113:11 188:17 big 123:22,24 125:8 136:18 152:1 biliary 136:24 bill 69:14 76:15 173:21 174:8 191:25 193:21 bit 109:3 114:6 162:14</p>	<p>black 25:12,15 26:14,15,21 27:20 31:25 32:2,16,20 113:16 136:23 blackjack 25:10 blog 176:3 board 8:10,13 20:10 20:14 99:1 body 89:20 100:25 188:2 bond 31:12 32:21 bonding 25:19 27:15,21 29:4 31:3 31:3 32:14,18 33:4 33:20 bonisch 178:15 book 48:18 193:16 boston 82:22 bouchet 74:11 75:20 boundary 151:21 bounding 24:17 bpi 45:24 47:14,25 break 78:2,4 breaks 17:4 breezeway 185:4 breezeways 185:19 brief 29:22 79:1 177:5 briefly 68:23 108:6 137:24 bring 37:14,17 53:8 100:15 131:15 150:18 brinkley 104:25 broad 43:6 broadly 101:11 brodoff 2:17 broke 136:5 broken 13:10 37:5 103:20 104:19 brought 36:7 39:10 47:12 104:13 112:24 build 122:22</p>	<p>builders 35:7,25 44:23 building 20:7,8,10 20:11 36:16 38:5,12 38:19 39:25 41:15 41:16 45:2,6,7 58:2 62:22 81:22 82:1 86:3 92:8 93:18,21 96:20,21 98:1,22 101:16 102:24 103:23 106:11,24 108:14,17 109:5,25 110:13,17 111:22 112:3,10,12 140:19 144:20 150:8 154:2 155:10 156:25,25 171:1 173:7 179:6 180:1 181:4 185:6,7 185:8 193:24 194:1 buildings 29:25 81:20 86:9 92:18 94:4 95:20 97:20 99:15,18 100:23 101:8 102:15 104:10,11 108:15 117:17 152:7 154:5 156:11,23 185:19 built 124:17 145:19 148:10 158:10,16 185:17 burden 41:12 146:1 bureaucracy 144:21 burning 42:3 bush 84:21 85:1 88:8 164:10,14 178:16 192:2,6 business 41:25 81:10,14,16,19 82:11,14,20 83:8,12 84:1,18,21 85:3,15 85:24 86:1,4,12 87:8 88:4,5 116:15 164:10,15 178:18 192:3,8</p>
--	---	--	--

[businesses - change]

<p>businesses 122:6 busts 127:11 button 78:18 buuk 35:6,24 44:22 47:13</p>	<p>car 137:7 carbon 31:9 42:18 42:21 care 10:22 20:9,10 20:14,14 51:4,19,23 52:10 53:5 54:12,14 54:15,16,19 116:10 119:5,10,18,21 120:2,4 121:8,18 122:2,4 123:23 124:10 125:25 127:6 128:15 129:11 130:7,9 131:8,13 134:20 135:9,22,24 136:21 137:19,21 139:21 140:15 142:2 143:9 144:14 145:17,18 145:25 149:14,20 154:19,22 167:23 172:17 178:23 188:19,25 career 97:7 careful 168:23 caregiver 131:2 caretakers 168:2 carmel 113:16 carpenter 42:23 case 26:10 40:11 46:17 60:7 63:17 70:11 100:8 117:22 122:16 124:19 151:15,15 cases 136:4 cast 7:10 9:8 11:5 catastrophic 118:2 caught 136:22 caulk 37:12 42:24 43:1,8 caulking 37:11 45:12 cause 54:24 caused 132:22 ccr 1:23 195:23</p>	<p>ccst 25:20 cease 113:24 138:18 160:24 189:19 ceases 59:22 ceasing 114:3 138:20 ceiling 37:11 census 18:20 center 3:3 92:9,21 96:18 97:5 103:3 central 100:18 century 131:15 ceremony 21:7 certain 3:13 4:18 5:21 86:5 143:14 certainly 43:10 106:4 certified 4:3 5:10,11 5:18,21,24 6:5 7:18 9:9 11:25 12:11 21:16 23:5,25 24:3 24:7,13 33:5 35:3 51:11 52:3,7,15 57:11 58:9,12 67:13 71:19 79:18 80:10 80:12 91:3 115:3 126:21 139:16 141:19 146:24 161:23 163:25 166:4 179:12 180:6 180:8 182:5 186:24 189:2 190:19 193:7 195:1 certify 195:2,15 certifying 25:5,18 26:14,19 27:2 33:8 cetera 105:16 chair 2:15 5:10 9:12 10:16 17:14 20:12 22:25 23:11 34:9,9 44:21 49:13 51:6,17 53:21,21 54:1 61:13 66:16 68:22 70:24 73:21 77:2,22 79:13 79:24,24 83:15,16</p>	<p>84:9,9,20,25 85:2 90:11,13 94:17,17 95:11 118:16 119:3 119:4,7,9 141:17,17 141:20,21,24 142:1 146:5 149:11,11,13 149:18,20 163:17 164:9,13,14 169:2,2 170:13 177:5 178:7 178:7,10,15,17,18 178:20,22 179:7,20 183:6,7,10 186:9,10 188:14,22,24 191:22 192:7,18,19 193:18,25 chaired 19:1 chairman 29:9 35:23 43:15 50:11 51:17 57:17,18 66:17 70:25 73:22 77:3,22 166:17 177:18 179:1 188:13,18 191:20 192:2 chairs 178:13 193:20,21,23 194:4 challenge 89:3 121:9 challenged 6:9 chance 28:23,24 33:14 change 24:8 39:7,18 40:4,5,6,16,21 41:15 43:25 54:2 55:13,14 62:16 64:22 84:11,14 85:23 88:3 97:9 101:17 104:14,16 112:16 120:16,19 124:8 126:9,12,20 126:23 127:4 128:19 129:24 144:2,9 152:16 153:23 165:10 169:5,11,12 174:1</p>
<p>c</p>			
<p>c 2:4 3:11 21:2 cabot 28:4 33:12 39:3 43:19 47:9 cabot's 44:24 cages 170:22 calculations 42:24 42:25 43:2 california 20:24 179:8 call 3:17,21 113:17 113:18,22 138:11 138:13,17 160:19 160:23 189:16 called 30:25 109:16 162:18,21 calling 114:2,10 138:20 161:1 168:10,15,18 176:14 cam 14:22 52:12 139:22 camera 15:7 103:4,4 103:7,9 cameras 96:16 102:25 103:6 108:18 111:23 112:3,6,9,11,15 113:1 cams 5:19,20 canales 121:25 cantabria 82:23 86:24 canterbury 82:23 86:24 capacity 81:21 178:14 capturing 15:7,8</p>			

[change - comment]

<p>191:14 changed 163:24 changes 7:14,17 14:8 38:5,11,19 40:2,22 48:12 60:16 64:23,24 97:8 115:20 128:4 129:11 135:1 144:5 145:15 149:22,25 160:3,5 191:13 changing 39:16 46:21 chapter 18:10,21 36:13 37:2 60:13,17 60:18 61:17 64:20 64:21,23,24 65:1 66:3 68:15,16 69:1 69:2,23 75:16 76:9 76:10,17 84:14,16 92:2 94:19,20 95:2 95:19,22 104:11,12 107:13 132:6 143:17 150:5,18,19 158:11 169:6,12,16 174:23,24,25 176:5 176:14 189:4 chapters 84:12 95:23 143:12 166:21 167:1,9 169:10,11,16 173:23 characteristics 176:6,16 charging 59:18 checked 78:10 checking 46:2 48:25 chemical 59:19 chicago 96:22 choice 19:4 choke 42:18 choose 116:1 church 37:3 cincinnati 184:5 circuitous 117:10</p>	<p>circular 11:18 circulatory 155:1 citation 143:22 cities 44:13 citing 95:4 citizens 105:14 city 136:7,22 civilian 136:1 clarification 88:20 165:11 clarified 110:5 clarifies 163:3 clarify 62:17 111:13 165:6 clarifying 111:17 clarity 54:20 145:4 class 74:22,22 130:24 classification 169:9 169:13 170:3 171:20 177:8,9 classified 170:2 clean 155:2 cleaned 53:17 clear 60:6 65:22 66:3 101:9 110:15 142:6 143:21 181:5 181:24 clearer 48:24 153:7 clearly 46:20 133:4 172:7 cleveland 96:8 108:15 112:3 clinical 121:19 135:8 154:19 close 16:16 71:12 77:14 88:22 153:8 155:19 157:17 closed 16:17 34:22 50:2 56:18 67:7,8 71:13 77:16 90:24 114:8,24 138:23 139:12 146:20 161:5,19 166:1 178:2 186:21 190:1</p>	<p>190:15 193:4 194:13 closely 85:15 88:7 closer 88:25 closest 3:1 closures 94:21,24 coated 59:24 60:15 60:16 61:23 63:10 64:17,21 65:2,23 66:1 68:14 69:20 coating 60:12,13 75:16 coatings 58:2 69:5 code 20:8,9,13 22:24 23:13,18 25:21 27:22 29:12 30:4,22 33:2,3,3,16,18,19,20 36:3,20,23,24,25 37:1,2,14,18 38:1 39:23,24,24 40:13 41:5,11 44:8,12,14 45:6,7,18 46:22,23 46:24 47:16,19,24 48:5,7,9 49:3 51:23 52:11 53:6 60:6 62:16 65:24 72:20 73:8 74:21 76:11 80:5 82:2 85:18,20 97:8,9 103:1 104:14 104:16,18 106:16 107:2,2 109:17 112:16 125:17 129:20 130:13 131:15,22 132:4 134:2 135:11 139:21 140:15,17 142:6 143:12,13,18 143:24 145:5,16 153:16,19,20,24,25 163:22 164:2,19 167:5,12,12 169:7 169:14,24 170:19 171:1,1 172:21 173:12,16 174:4 175:25 180:1 181:4</p>	<p>181:23 185:4,6,7,22 193:24 codes 3:18 7:17,23 19:24 26:24 39:25 47:25 64:15 73:16 113:3 132:11 156:2 157:13 173:7 175:8 175:19 179:6 185:8 collapse 97:5 colleagues 111:17 collection 18:17 85:9 college 122:1 collins 184:4 colored 31:1 colors 32:22 columbia 79:14 columns 44:9 combat 81:22 combinations 125:4 combined 36:3 combines 5:18 combustible 122:8 combustion 36:14 36:18 38:7,10,10 39:21 40:15,19,23 42:14 44:4 46:3 48:8,11 73:1,4,12 74:1,3 come 67:18 70:15 111:3 118:8 131:21 133:18 153:9 comes 30:5 38:6 comfort 17:3 coming 32:11 104:3 command 92:9,21 96:18 108:8 comment 16:3,8 24:23 34:13,17 36:8 45:13 46:5 47:6 53:22 71:23 72:2 76:25 77:8 92:15 101:3 110:4 111:5 116:24 162:2,5 165:19 166:9,12</p>
--	--	--	---

[comment - concluded]

<p>177:20 185:25 190:23,25 192:23 193:19 comments 17:2 34:8 34:10 39:7,13 49:12 49:13 55:24 83:4 104:7 109:2 122:24 129:2,10,13 163:19 173:21 177:4,5 186:9 188:13 189:15 193:17 commercial 105:24 commission 151:23 committee 4:19,20 5:9,10,13 6:5 7:2 14:16 17:16,22 18:12,20,25 19:11 19:17,19,20 20:2,7 20:17,20 21:23 22:23,25,25 23:2,12 23:16,20 25:22 27:6 27:12,18 28:7,9,23 30:21 31:11,13,17 31:24 32:10,23 33:14 34:5,9 36:4,5 36:8 38:1,8 39:7,11 39:13,14 42:11,20 44:7,18 45:14,16 46:4 47:2,20 49:13 50:25 51:5,6,8,17 52:11 53:6,10,14,21 53:22 54:1,2,17,20 55:25 57:3,5,5,8,17 57:19,24 58:4 61:15 61:21 62:15 66:6,16 68:22,24 69:25 70:24 72:13 73:21 75:25 76:20 77:2,22 78:25 79:11,12,15 79:24,25 81:9,12 83:6,9,14,15,18 84:9,11,13,18,20 85:3,14,22,25 86:2 87:14 88:18,19 89:4 89:17 90:1,11 92:1</p>	<p>92:12,16 93:11,13 94:17 95:7,10,11 99:2,23 101:17 104:17 106:20 109:5,6 110:13,14 117:6 118:18,20,23 119:1,4,10,11,16 120:12 123:16 124:5,25 125:10 126:10,10,18 127:14 128:14,18 129:9 130:8 131:22 132:4,19 134:3,5,19 135:12 139:21 140:16 141:17,21 142:2 146:5 148:7 148:25 149:11,14 149:21 150:4 160:3 160:12 162:19 163:10,18 164:9,15 164:17 169:2,4,18 170:8,12,17 173:25 175:9 177:5 178:7 178:10,12,16,17,19 178:21,22 179:5,7,9 181:8,13,13,17,20 181:25 182:9,15,22 182:25 183:6,8,11 184:6,15 185:10 186:1,10 188:14,18 188:24 191:22 192:3,8,10,19 193:18,20,22,25 194:2 committee's 27:5 31:18 37:22,23 38:15 53:20 61:11 63:20 68:21 73:20 75:21 79:12 88:3 94:16 95:8 118:15 119:6 121:16 141:16,22 149:10 149:15 163:16 164:11 169:1 170:8 179:6 183:5 191:21</p>	<p>committees 7:16 10:12 19:21 20:9,13 51:4,18 101:19,20 179:21 193:24 common 28:11 82:8 85:24 88:4 communities 116:12 community 122:1 companion 43:24 company 9:13,16 21:3 company's 29:11 compared 25:10 comparison 32:14 compartment 116:16 117:1 118:19 120:18 123:17 126:5,7 127:9 128:6,12 129:10 130:14,16 130:17,19 131:4,5 132:6 133:1,3 134:6 138:3 150:7,16 151:18 152:9,11,13 152:19,22 156:10 156:13 157:15,22 157:23 188:4 compartmentation 132:20 137:2 154:1 compartments 115:22 116:23 117:13 119:18 120:15,21 121:10 121:14,15 122:23 125:9,19,21,23 126:12 127:1,12 130:12 131:10 142:10 150:13 157:10 compelling 46:17 126:11 competitive 26:18 competitors 26:16 26:17</p>	<p>complete 46:16 58:23 78:25 completely 44:1 48:4 completion 12:11 195:12 complex 98:2 complexity 94:12 compliance 5:11 107:21 158:12 compliment 123:11 comply 14:9 174:16 174:17 component 36:16 40:21 45:3 components 26:11 123:23 comprehensive 109:9,17 comprise 4:4 compromise 42:17 133:1 compromised 28:22 38:11 159:18,23 computer 32:19 128:20 concentrated 81:14 83:12 86:6,12 87:10 87:12 88:13,22,25 90:2 concept 103:18 concern 28:21 33:23 39:24 78:8 94:18 140:25 151:24 152:1 156:24 concerned 41:11,13 106:13 137:8 157:12 concerning 6:4 7:16 93:14 concerns 39:10 94:6 99:17 conclude 105:11 concluded 81:17 82:9,25 83:21,23</p>
---	---	---	--

[concluded - corresponding]

<p>87:9 99:5 120:13 164:18 concludes 19:16 21:7 194:8 concluding 87:6 133:22 conclusion 83:10,22 182:18 concur 103:18 191:22 condition 38:17 39:17 86:12 133:1 133:23 137:4 151:13,19 conditions 120:22 conduct 3:18 11:12 conducted 12:7 82:6 82:12,21 175:6 conductive 25:10 31:8 conduit 94:23 conference 1:10 3:12 12:6 100:22 configuration 123:17 configurations 98:1 configuring 152:13 conflict 33:2,18 88:18 158:16 conflicting 98:9 conflicts 46:1 confused 76:19 78:3 confuses 54:21 confusion 25:19 54:24 55:2 142:13 congratulating 19:13 conjunction 102:3 150:4 connecticut 21:1 57:7 conscious 86:1 consensus 7:13 74:2 153:4</p>	<p>consent 21:20 50:22 consequence 180:25 consequences 160:4 conservative 81:19 82:11 88:16 125:8 consider 28:25 113:7 124:20,22,24 151:16 188:17 considerably 133:16 171:19 consideration 5:20 6:17 10:19 15:23 22:22 51:3 57:2 79:10 129:1 151:7 151:13 152:15 168:23 179:5 considerations 124:9,12 142:17 considered 5:1 17:10 21:19 22:7 28:9 40:18 50:18,21 60:12 86:4 119:17 135:20 160:4 166:19,23 187:5 193:13 considers 7:14 164:17 consist 51:22 80:4 110:16 consistency 165:11 182:7 consistent 155:25 157:25 158:8,15 163:11 consistently 188:7 consisting 23:17 57:25 179:25 consists 23:20 58:4 constant 138:1 151:24 constantly 110:6 126:15 construction 20:7,8 57:4,20 95:21 104:21 117:20</p>	<p>118:5 119:23 130:23 132:6,16 134:19 147:21,22 148:3,4,8,9,17 149:1,3,4 151:8,9 180:1 188:3,3,6 194:1,2 consult 94:12 consultant 29:10 consultants 153:14 consulting 20:6 29:15 100:5 109:1 134:16 137:18 143:7 contain 14:19 151:20 175:10 contained 3:24 11:25 12:5 23:5 51:11 57:11 79:18 99:3 121:16 179:12 containing 150:13 containment 136:9 152:9 contemporary 120:22 context 101:7 109:14 110:25 continue 12:25 21:9 132:23 161:3 175:24 continues 149:3 continuing 128:21 continuous 19:20 100:19 continuously 79:8 contogry 88:9,10 contractor 18:15 contrary 182:2 contributed 18:15 contributions 17:23 19:9 178:12 control 48:18 103:3 112:22 136:8 147:23</p>	<p>controls 48:17 135:17 convene 2:10 conveniently 63:4 75:12,17 76:8 convention 3:3,22 4:25 12:8 17:9 21:18 22:6 50:17,20 conventional 30:24 converts 88:15 cook 96:21 coordinator 2:14 copies 3:23 4:1 12:9 79:2 copper 30:1,2 31:4 32:1 core 174:23 corporation 17:1 20:22 correct 37:14,18 62:19 164:19 192:12 correction 141:4 correctional 178:19 correlate 153:19 181:14 183:14 185:7 correlated 134:7 correlates 185:12 correlating 20:7 51:6 54:2 80:18,22 84:13 89:17 90:8,17 118:17,20 163:18 169:4,12 173:24 179:7 correlation 54:3 94:19 141:18 149:12 163:20 181:3 188:15,16 191:24 corresponding 35:10,15 49:11,20 91:8,16 114:18 129:7 140:8 146:13</p>
--	--	---	--

[corridor - definitely]

<p>corridor 142:11,12 142:13,14,16 143:15,17 144:2,7 144:15,16,25 145:21,22 155:1</p> <p>corridors 142:5,9,19 142:19 143:21 144:20 145:5</p> <p>corrosion 26:9</p> <p>corrugated 25:6 26:20 30:5</p> <p>cost 95:9 116:14,16 122:15</p> <p>costing 37:8</p> <p>council 2:9,13,15,16 2:20 6:13,20,24 7:21,21,25 8:2,9,15 17:14,15 20:15 21:5 21:21 22:14 30:14 30:14,16 46:13 50:23 77:25 109:7 153:18 155:24 156:7 173:24 180:13,23 184:17 184:25</p> <p>council's 5:9 8:5,12</p> <p>counsel 2:18,19</p> <p>count 121:10 194:7</p> <p>counted 78:12</p> <p>counting 110:1 121:13</p> <p>countries 132:12,14 133:8,20,24 159:6 159:24</p> <p>country 152:4</p> <p>county 96:21</p> <p>couple 10:6 75:7 78:6,13 127:1 153:6</p> <p>course 89:24 181:17</p> <p>court 195:1</p> <p>coverage 29:2 47:16 48:3 106:24</p> <p>covered 129:1</p> <p>covering 27:9</p>	<p>crack 43:9 48:22</p> <p>cracked 37:11</p> <p>crane 22:25 23:1,10 24:1 34:8 37:21 38:22 49:12 50:10 111:18</p> <p>create 155:8 191:24</p> <p>created 81:13</p> <p>creep 145:20</p> <p>crevie 156:6</p> <p>crew 108:16</p> <p>criteria 73:25 74:18 93:23 94:1 125:22 125:22 148:11 154:4</p> <p>criterion 103:25</p> <p>critical 93:25 137:4 156:11</p> <p>critically 49:1</p> <p>crowley 51:6,16 52:5 53:19 54:5 55:24 57:1</p> <p>cryer 179:17 180:7 183:4</p> <p>csa 26:12</p> <p>csst 24:15 25:9,12 25:15,25 27:9 28:15 28:18 29:3,5 31:24 32:2</p> <p>curious 69:16</p> <p>current 27:22 81:24 87:10 94:5 128:12</p> <p>currently 25:20 26:21 27:9,12,16 29:5 107:13 127:8 164:18 181:7</p> <p>cuts 135:7</p> <p>cycle 5:5,7,14,15 23:16 27:7 51:22 57:23 60:5 64:13,23 80:4 111:3 179:24</p> <p>cycles 18:15 103:5 143:12 185:15,15</p> <p>cycling 110:7,8</p>	<p>d</p> <p>d 2:4 131:20</p> <p>damage 28:17</p> <p>dampers 48:18 136:9</p> <p>dan 35:6,24 44:22 98:21 106:10 160:18</p> <p>dangers 135:21</p> <p>data 18:17 28:24 31:23 32:13,22 85:21,22 87:15 88:6 92:10 93:3,7,8,15 93:20,20 100:12,13 104:3 105:3 116:7 129:12,14 134:6 159:20</p> <p>date 101:1 117:20 195:18</p> <p>dated 195:21</p> <p>dave 54:11 74:11 80:15 81:4 86:21 87:3 91:5,21 103:16 108:13,16 111:11 149:19 188:18</p> <p>david 109:3 119:5,8 141:21,25 149:15 188:23</p> <p>dawn 2:16 17:14,18 21:12</p> <p>day 7:8 106:2 178:23</p> <p>days 6:24 7:3,8 8:12</p> <p>de 120:11</p> <p>deadline 5:4 8:15</p> <p>deal 99:14 113:3</p> <p>dealing 110:6</p> <p>deals 104:2</p> <p>death 159:17</p> <p>deaths 122:13 132:22 135:25</p> <p>debate 7:19 10:7,8 10:17 11:9 14:6 15:7,8 22:10 27:24</p>	<p>32:7 33:15 34:4 38:23 54:6 62:4 64:13,14,18 69:9 74:6 86:16 96:3 113:24 114:3 120:25 138:18,20 142:25 150:22 160:24 161:3 164:24 171:3 182:12,13 183:16 189:7,19 192:14</p> <p>debated 10:5 14:7 32:13 60:4,5 95:11</p> <p>debates 10:11</p> <p>debating 64:12 72:22</p> <p>decade 105:18</p> <p>decades 101:2 130:20</p> <p>deceased 73:14</p> <p>decide 78:15</p> <p>decided 162:19</p> <p>deciding 113:4</p> <p>decision 107:20 108:11 113:2 119:2 124:23 134:5 167:2</p> <p>decisions 8:5,14 102:5 108:12 148:19</p> <p>declare 2:9 194:12</p> <p>decommission 156:19</p> <p>decrane 108:3 112:2</p> <p>decrease 137:24</p> <p>dedication 19:2</p> <p>deem 11:11</p> <p>defend 83:17 125:20 140:21</p> <p>deficiencies 116:8</p> <p>define 142:4 177:10</p> <p>defined 74:16 142:20</p> <p>defining 177:8</p> <p>definitely 55:16 133:7 161:7</p>
--	--	--	---

[definition - distinction]

<p>definition 63:8 142:6 166:25</p> <p>definitive 125:11</p> <p>delaware 21:3</p> <p>delete 143:8 182:22</p> <p>deleted 181:8,22 183:1</p> <p>deleting 35:9,14 49:10,19 58:18 66:13,25 91:15 114:17 140:7 146:13 182:10</p> <p>deletion 58:24</p> <p>demonstrate 26:3 32:18</p> <p>demonstrated 110:8 129:15</p> <p>den 175:3</p> <p>dense 85:23 126:13 126:13</p> <p>density 137:25</p> <p>department 119:9 125:16 135:6,7 141:25 149:19 160:19 188:23 189:12</p> <p>departments 131:12 134:24 154:25 155:12</p> <p>dependent 167:18</p> <p>depending 133:15</p> <p>depends 168:7</p> <p>deruyter 21:2</p> <p>described 27:20 59:3</p> <p>description 145:2</p> <p>design 55:9 93:22 94:6 103:21 104:17 104:20 106:15 107:1 116:14 117:15 119:21 120:4 131:13 134:19 135:6 143:25 154:4 155:16,16,18 158:6</p>	<p>designate 142:18 143:16</p> <p>designated 22:3 142:11,12</p> <p>designed 13:24 130:11</p> <p>designer 93:3</p> <p>designers 126:5</p> <p>designing 131:7 152:13</p> <p>designs 41:22 120:8 148:18</p> <p>desk 3:9 4:2 12:10</p> <p>detail 95:19 99:2 106:14</p> <p>detailed 101:14</p> <p>details 3:10 75:22 99:3 105:15,19,20 106:8</p> <p>detection 119:24 130:21</p> <p>detention 167:24 178:19</p> <p>determination 12:21</p> <p>determine 82:6 93:4 97:3 105:7 145:17 154:10,16</p> <p>determines 60:7</p> <p>determining 44:3</p> <p>developed 72:14 73:13,14 85:25 129:20</p> <p>developers 47:18</p> <p>developing 18:22 159:24</p> <p>development 3:19 4:9,11 11:8 13:22 17:24 19:3,24 79:9</p> <p>device 13:7,8,8,9,11 13:13,16 78:21 79:6 186:4</p> <p>devices 3:15 9:5 13:2,2 16:2 173:13</p>	<p>devoted 110:22</p> <p>dezney 54:11</p> <p>diagnostic 134:21</p> <p>died 106:2</p> <p>differ 171:19 173:5</p> <p>difference 25:9 40:24 72:25 172:5,8 177:11</p> <p>differences 153:19</p> <p>different 31:20 40:4 40:10,16 106:17,25 107:1 152:23 164:4 164:6</p> <p>differently 64:9</p> <p>difficult 131:20 142:5 152:19</p> <p>difficulties 89:4</p> <p>difficulty 145:13 172:10</p> <p>digital 85:8</p> <p>dilutes 105:23</p> <p>dimascio 178:18</p> <p>dimensions 130:14</p> <p>diminish 132:8</p> <p>dining 145:20</p> <p>direct 24:17 29:4 106:21</p> <p>direction 106:24 195:9</p> <p>directly 6:13 21:21 50:23 109:6 138:18 160:24 189:21,24 190:4</p> <p>director 123:3 151:3</p> <p>directors 8:11,14</p> <p>directory 3:25 4:14</p> <p>directs 176:15</p> <p>disability 3:7</p> <p>disagree 53:9 151:12</p> <p>disagrees 135:25</p> <p>disappointed 31:17</p> <p>discretion 14:5</p> <p>discuss 105:20</p>	<p>discussed 149:25 170:17 191:7</p> <p>discussing 30:23 89:25</p> <p>discussion 7:11 8:7 9:11 16:5 24:2 25:3 34:11 35:2,20 49:7 50:7 52:6,23 55:5 55:23 56:6,23 58:11 59:11 66:10 67:13 68:5 70:18 71:18 72:8 76:24 87:23 89:8 90:6 91:2,20 97:14 115:2 140:12 146:3,23 161:22 162:9 165:14 175:2 177:1 178:5 186:7 190:18</p> <p>discussions 80:12 100:2 122:17</p> <p>dislocation 137:1</p> <p>display 110:15</p> <p>displayed 23:7 51:13 57:13 79:20 92:20 179:14</p> <p>displaying 14:17 15:16 123:12</p> <p>disposition 8:1</p> <p>disrupts 135:7</p> <p>dissecting 89:4</p> <p>dissipating 31:5</p> <p>distance 117:1,3,7,8 117:9,14 120:17 125:3 126:2,2,3 127:5,11 130:16 131:5,9 150:14 152:17 154:1 155:7 157:3,4,19 171:22 172:1,3,4 177:14,16</p> <p>distances 122:8 138:1 172:9,15</p> <p>distinct 2:8</p> <p>distinction 64:17 121:21</p>
--	---	---	--

[distinguished - engineer]

<p>distinguished 19:23 division 96:9 document 4:22 22:13 23:3,23 44:25 45:17 50:9 51:9,25 56:25 57:9 58:7 77:24 79:16 80:7 170:17 172:23 174:18 179:4,10 180:4 documented 143:15 documents 3:24 22:15 56:2 175:16 175:16 doing 37:6,11 46:14 53:10 55:1,2 68:11 75:13 101:6 113:8 116:15,18 dollars 37:9 don 189:11 door 48:22,23 120:18 126:4 130:16 150:16 doors 42:1 131:5 157:15,16,17 double 53:13,14 54:22 55:11,17 125:9 152:8 doubles 128:5 doubling 117:7 151:17 dr 73:14 draft 4:21,21 14:16 23:3,14,15 27:13 38:15 39:12 51:9,20 51:21 52:19 55:7 56:10 57:9,21,22 61:14,20 67:20,25 68:24 69:3 70:20 71:6 80:2,3,19,23 81:9 83:5,5 84:10 85:6,17 89:21 90:9 90:18 91:25 92:14 101:18 109:14 118:25 179:10,22</p>	<p>179:23 180:14,17 185:16,23,24,24 186:14 draft's 32:11 drafted 185:6 dramatic 134:21 135:1 144:2 145:15 drill 108:20 112:6 drinking 133:21 driven 136:11 dubai 131:21 158:21 due 94:11 137:1,25 159:23 178:13 duly 195:6 dunk 100:8 dunkin 41:22 55:9 56:4 158:5 dupont 21:3 durability 173:15 duty 152:8 dwight 20:21</p>	<p>190:9 editions 34:1 181:2 editorial 55:13,14 education 45:21 144:11 educational 86:5 178:22 effect 59:24 effective 31:5 156:14 157:24 176:4,11 effectively 11:12 101:4 156:9,15,17 156:18 effectiveness 173:15 efficacy 26:3 27:15 32:18 efficiency 13:25 effort 82:16 123:14 153:18 154:7,8 155:15 efforts 19:10 33:24 153:21 eggs 117:23 egress 81:21 89:22 89:22 90:1 92:2,11 92:12 96:20 97:1 98:3 107:12 108:18 112:6 142:5,14,17 157:7,18,20 170:21 171:18 172:19 174:15,15,16,16 178:21 181:13,17 183:7,11 184:6 185:9 eight 136:10 either 54:2 170:25 eldesburg 184:24 electric 33:18 electrical 10:21 25:21 26:4,6 31:3 33:3 94:23 107:14 119:25 electronic 9:5 13:2,7 14:13,14 79:6 94:13</p>	<p>106:22 elements 98:3 116:14 elevators 3:6 eliminate 25:18 75:14,17 116:15 142:13 eliminated 162:20 eliminating 14:1 55:1 elite 175:15 embrittlement 26:8 emergences 171:14 emergencies 102:6 emergency 3:8 92:9 92:21 102:4 105:8 105:12 109:15,15 136:20 172:11 emotion 156:18 emphasize 163:4 employee 134:17 195:16 enabled 119:1 enclosure 94:24 95:1,5 enclosures 102:15 encourage 27:1 33:8 34:2 41:3 42:6 43:15 44:17 84:4 94:7 143:25 ends 66:4 122:24 energy 36:25,25 122:7 enforce 113:1 126:15 enforceable 42:5 enforcement 41:24 44:11 94:6 104:6,20 113:6 enforcers 104:18 enforcing 140:18 engage 182:13 engineer 144:19 184:24</p>
	<p>e</p>		
	<p>e 2:4,4 3:11 e2768 72:14 73:13 73:24 e5 72:14 e69 73:6,12 e84 72:15 73:10 e85 73:13 earlier 98:25 133:25 191:25 easily 102:23 152:10 easy 101:15 145:19 ed 184:4 edge 63:12 edges 63:14,19 edition 18:21 23:22 30:4,23 34:3 51:25 58:6,18 80:7 115:10 115:14 139:6 143:24 145:15 147:6,11 156:1 161:13 166:18,24 180:3 187:15,19</p>		

[engineering - fact]

<p>engineering 18:2 21:1 23:1 29:11 30:18,19 42:10 116:4,5,17 154:15 engineers 102:12 131:24 england 100:23 109:25 enhanced 17:24 ensure 14:6 38:9,10 128:25 entered 58:22 entertain 12:13 entertaining 151:16 entire 8:6 40:8,12 45:16 64:22 144:20 160:11 174:18 entirely 62:19 168:7 182:20 entities 10:13 entitled 4:6 12:1 entry 96:24 envelope 36:16 38:5 38:12,20 39:18 40:2 40:17,22 41:15,17 42:17 43:9 45:2 48:12 environment 122:11 125:21 128:9 134:22 135:9,11 environments 120:3 144:1 154:23 162:17 envision 103:6 equipment 28:17 92:5,22,24 93:4,6 93:10,17,20,24 94:4 104:1 107:14 119:25 120:1 124:11 equivalent 27:21 31:5 32:21 74:3 173:14 ergonomic's 101:23</p>	<p>ergonomist 101:22 eric 135:22 especially 96:20 145:16 148:17 159:6 essentially 154:20 155:8 established 130:19 156:13 et 105:16 evacuate 140:21 evacuated 136:20 evacuating 172:10 evacuation 3:8 100:21 101:8 108:14 140:20 141:2 evaluate 40:8 112:5 112:7 evaluated 26:23 evaluating 104:3 evaluation 93:2 104:4 116:3 141:6 event 9:8 11:15 48:22,24 118:2 events 117:24 118:1 eventually 132:18 everett 2:18 everybody 102:5 148:5 155:21 evidence 27:19 115:24 123:25 evolved 120:5 exact 72:15 147:21 186:2 188:5 191:7 exactly 183:24 example 101:6 109:12,24 110:18 119:22 120:8 136:5 171:23 exceeding 92:6 93:1 excellent 43:23 101:5 exception 150:2</p>	<p>excess 103:8 135:2 excuse 24:9 65:4 95:13 105:17 127:24 132:1 134:9 executive 123:3 151:3 exemplary 19:21 exercise 154:16 exist 105:4 168:1 181:7 existed 181:1 existence 152:11 174:3 176:21 existing 37:24 38:18 41:1 43:24 44:2 48:10 83:1 92:18 104:10,10,11 107:16 143:19 144:14 147:22,24 148:1,4,7,17 149:2 149:23 150:2,14 151:9,13,18 152:7 154:4,5 155:21 156:11,19,25 158:9 158:17 159:2 160:1 188:3 192:11 exists 2:10 25:20 109:18 188:5 exit 2:25 3:1 82:1 92:5,11,20,25 94:24 95:1,5 98:13 101:13 112:7 126:3 138:2 143:21 171:22 172:8,15 exiting 94:21,24 exits 2:24 143:18,19 143:20 expansion 121:9 expect 13:20 113:12 expectation 16:23 expected 41:14 expects 164:5 experience 109:24 131:7</p>	<p>expert 47:20 expertise 84:17 expired 130:12 explain 12:23 162:15 explains 172:7 explanation 43:6 expo 1:10 12:6 exponentially 115:21 exposed 61:4 expressed 10:10,11 11:9 73:15 78:9 117:5 extended 73:10 extends 134:3 extensively 132:12 157:14 extent 94:25 exterior 48:23 93:24</p> <p style="text-align: center;">f</p> <p>fable 87:3 193:9 fabrics 162:25 faces 63:16 facilities 20:10,14 51:5,19,23 116:10 122:2 127:3,7 129:12 131:8 134:20 135:24 145:17,19,25 148:2 149:24 150:1,2 154:22 155:21 159:3 160:2 166:23 167:4,7,10,16,20,25 168:5,21 170:1 175:24 176:13,18 facility 54:19 125:25 126:24 128:16 134:15 135:22 143:7 144:4,15,22 144:24 158:17 169:21 172:11 fact 6:1 32:12,16 39:12 53:23 54:21</p>
---	--	---	--

[fact - first]

60:15 68:13 73:14 95:3,5 110:16 117:10 119:1,17 121:13 131:7 132:21 143:17 152:2 157:4,18 169:24 facto 120:11 factor 81:10,13,18 81:25 82:2 83:7,13 83:21,25 84:13 85:5 85:15 87:7,11 121:11 155:6,8 factors 81:16 82:7 82:13 99:12 119:20 120:12 factory 82:4 facts 99:7 141:9 factually 111:17 fail 133:14,15 163:1 failed 16:22 35:1 67:12 71:17 77:20 100:14 fails 7:2 9:9 15:5,20 70:11 91:1 115:1 146:22 178:4 failure 123:12 133:16 failures 30:10 fair 148:12 149:2 fairness 148:9 fall 5:5,13 36:23 falls 89:18 familiar 3:20 28:15 43:13 families 106:3,4 fantastic 109:6 far 137:8,11 157:11 favor 15:13 16:10 24:6 29:18 34:18 41:10,23 48:19 49:21 54:13 56:12 64:18 67:2 68:9 70:5 71:7 76:5 77:9 88:1 89:13,14 90:19	90:25 102:12 107:10 114:2,19,25 115:7,18 123:7,8 132:2,3 138:20 139:7,13 143:7 146:15,21 147:3,18 158:23,24 159:11 160:13 161:1,2,6,14 161:20 162:11 165:8,9,20 166:2 171:9 173:20 175:4 177:21 178:3 183:18,22 184:1,7 184:13 186:16,22 187:11 189:20 190:2,10,16 192:23 193:5 fdny 106:4 feature 100:18 featured 176:4 features 154:2 february 5:6 fed 103:2 federal 108:15 112:2,10,12 feel 53:10 100:6 132:7 feet 25:15 73:1 81:11,11,13,25 82:3 82:14,15,20 83:2,8 83:22,25 88:15 115:23,23 117:1,2,3 117:4 119:19 120:15,22 121:12 122:18 123:19 131:11,12 133:4 135:3 148:13 150:7 150:8 155:6,7 157:19 171:25 172:2,4,4 felker 48:16 112:21 135:16 fellow 168:22 felt 53:8 62:15 120:20 192:10	fennigan 106:10 111:18 fennigan's 111:19 ferrell 41:9 fgi 126:14 134:18 field 18:17 29:12 47:16,19 48:5,9 100:16 fighters 99:15 fighting 96:25 figure 65:25 85:16 filed 5:3 6:23 7:3 8:11 final 5:12 7:8 55:24 66:15 70:22 77:1 90:10 146:4 165:14 177:3 186:9 192:18 193:17,19 finally 138:3 financially 195:15 find 43:2 69:16 88:24 127:10 159:4 164:3 167:9 173:1 fine 68:14 100:12 181:19 finish 76:17 finished 130:23 fiore 136:21 fire 1:9 3:2 10:21 18:2,9,11,16,16,22 18:23 58:1,2 59:18 59:22 60:1,3,12,23 61:16,22 63:1,11 64:20,21 65:24 68:25 69:5,21 73:7 73:7 74:18 75:1 76:18 82:18 92:8 93:21 96:9,18,21,24 98:22 99:15,16 102:11 106:11 112:6 113:16 115:5 115:6,17,19,24 116:1,4 117:17,24 119:24 121:7 122:8 123:3,24 124:21	127:18,20,22 128:3 128:16,23 129:14 129:25 130:24 131:22,25 132:4,7 132:14,25 136:5,16 136:16,16,22,25 147:2,3,16,18 151:3 154:2,3 156:7 157:23 159:23 162:18 171:1,14 173:6,14 175:7,13 175:13 184:23 187:9,11,24 188:1 firefighters 96:10 97:7 99:10 102:1 105:1 106:4 108:4 136:14 fires 96:17 117:16 122:13 135:21,22 135:24 136:2,4 159:14,21 firm 153:15 first 2:23 3:14 4:21 10:7 13:21 20:2 21:13 23:2,14 26:15 29:21 35:8,13 36:2 36:12,21 39:11 42:13 43:23 49:9,18 51:8,20 52:19 55:7 56:10 57:8,21 58:17 59:2,5 61:14 66:13 67:20,25 68:24 70:20 71:6 78:7,13 79:15 80:2,19,23 81:7,8 82:1 84:10 85:6 89:21 90:1,9 90:18 91:13,25 101:2 102:19 105:13 108:16 114:16 115:9,13 118:17,18 125:23 139:5,24 140:1,4,6 146:10,12 147:10 161:12 169:4 179:9 179:22 180:14,17
---	--	--	---

[first - gayle]

<p>181:12,18,25 182:16 183:13 185:16,24 186:14 187:13,18 190:8 fist 78:8 fit 14:20 fits 152:10 five 7:3 14:17 16:16 20:16 34:22 50:1 55:6 56:17 67:7 71:12 77:14,15 90:24 92:6 93:1 103:7 109:19 110:21 114:8,24 138:23 139:12 146:20 161:5,19 163:6 165:25 178:2 178:12 186:21 189:25 190:15 193:4,20 194:4 fix 105:20 184:9 fixed 142:20 flame 73:1,5,25,25 74:2 flanagan 98:21 flashing 3:4 flashover 129:16 flawed 117:6 flex 24:6 26:15,18 29:15 32:8 floor 10:1,2,7,8,24 11:22 12:25 13:3,4 15:15 16:3,8 21:8 28:6 31:7 34:16 35:12 39:5 43:21 47:6,11,13 49:17 52:17 53:9 56:9 58:25 66:22 67:23 71:4 72:1 77:7 80:21 90:16 91:12 114:14 115:12 121:20 136:6,10 138:5 139:3 140:3 142:22 144:5,16 146:8 147:8 161:10</p>	<p>162:4 165:19 166:11 171:10 175:5 177:2,20 180:16 183:17 186:3,13 187:17 190:6,25 192:17,22 floors 100:11 121:20 136:10 154:19,19 154:21 flows 112:7 fly 109:11 focus 172:12,13 folks 105:9 159:5 follow 5:22 6:6 12:13,14,18,22,24 12:24 followed 3:4,23 following 8:8,19 9:3 20:1 85:10 176:2 follows 24:13 171:11 foot 73:25 81:18 82:10 85:5,16,19 87:8,10,13,16,16 88:7,13,14 117:2,12 120:17,20 121:14 121:15,17 122:23 126:1 127:5,10 130:12,13,15,17,19 131:2,4,8 150:14 152:17,18,22 154:12,13 157:22 157:22 158:13 footage 117:8 135:4 135:5 force 30:14,15,16 125:24 fore 185:15 foregoing 195:3,5 195:10 forest 36:3 forget 111:2 forgot 76:8 form 32:22 36:8 94:5 109:22</p>	<p>format 122:18 123:11 176:5 former 31:16 134:17 171:19 forsythe 20:23 forth 93:8 195:4 forum 7:14 forward 36:7 39:11 54:25 99:20 100:24 153:22 forwarded 6:13,19 21:21 50:23 found 3:11 4:22 5:17 6:9 13:13 23:14,22 51:20,24 57:21 58:6 80:2,6 127:1 168:12 179:22 180:3 foundation 18:16 82:19 85:13 128:16 128:24 129:25 175:7 four 22:15 44:9 fp&c 153:13 frable 80:15 81:4 86:21 87:1 91:5,6 91:21 103:16 109:3 111:8,11 186:25 193:8 francisco 179:8 frank 153:13 free 120:3 frequencies 93:9 frequency 18:12 frequently 120:6 127:9 friend 108:13 front 9:2 63:16 65:9 frtw 68:14 fuel 22:24 23:13,18 33:3 36:23 37:2 38:1 39:23 41:5 44:12,14 45:17 47:24</p>	<p>full 33:15 34:4 93:21 108:14 fuller 2:12 fully 14:7 function 48:9 133:15 functional 176:7,18 functioning 135:8 136:8 fundamental 38:16 110:14 fundamentals 92:16 93:12 95:7,10 170:7 170:12 further 6:11 16:5 32:7 34:8,9,11 39:8 49:7,12,13 50:7 55:5,23 56:6,23 66:10 70:18 76:23 85:25 87:22 88:21 89:8 90:6,11 132:17 146:3 163:20 165:13 175:2 177:1 178:5,14 186:7 195:12,15 future 17:2 26:25 34:1 101:10 116:22</p>
			g
			<p>g 2:4 44:1 gagnon 21:1,1 gained 30:6 game 118:3 garage 39:19 gas 22:24 23:13,18 28:5 29:12,25 32:17 33:3,12,20 36:23 37:2 38:1,3 39:4,23 40:5,9 41:5,10 42:2 43:19 44:12,14 45:17 46:22,22 47:9 47:19,24 48:5,9 gayle 18:1,3,5,15,22 18:25 19:12,13</p>

[gayle's - heard]

<p>gayle's 19:2,8 gba 173:19 190:21 191:5 gbh 58:14 59:14 64:1 67:16 68:8 70:4 71:21 72:10 76:4 138:10 161:25 162:10 165:5 183:21 geared 147:20 general 2:18,19 36:5 80:16 81:4,10,16,19 81:20 82:11,14 83:7 84:1 86:21 87:8 91:6,22 103:16 111:11 137:5 170:20 generator 136:22 gentlemen 2:7 23:11 51:18 57:18 79:25 86:15 96:2 120:24 142:24 150:21 164:23 171:2 179:20 183:15 185:2 189:6 192:13 germans 110:9 getting 18:19 78:12 155:16 give 54:20 61:6 100:20 101:9 113:8 155:22 162:14,15 177:15 given 9:23 19:19 25:22 32:22 46:4 99:12 155:6,8 195:11 gives 135:23 144:12 157:8,10 169:8 giving 14:2,4 189:13 glass 37:6 glemore 112:21 135:16 global 20:25 go 40:7,11 46:24 59:21 66:3 84:23</p>	<p>101:13 111:24 113:24 114:12 122:9 127:6 138:18 139:1 149:4 153:1,8 154:9 157:16 160:24 162:24 167:8 172:25 174:20,21 178:8 179:19 184:17,17 188:9 190:4 192:4 goal 128:17 goes 18:1 40:25 46:5 59:23 88:21 going 21:8 26:24 42:4 43:1,2 46:22 46:24 69:19,22 75:22 78:16 88:2 94:12 97:3,4 98:9 98:14 99:13,16,19 101:13 103:2,3,24 104:4,6,8,19 106:25 124:25 127:3 138:21 141:9 145:23 148:20 151:20,21 152:19 152:22 153:2 161:1 170:15 174:20 188:9 189:21,24 golinveaux 2:7 good 2:6 17:19 35:5 37:15 41:8 46:14 49:4 57:17 78:11 98:20 106:10,23,24 107:3,9 108:11,13 108:19 122:17 123:23 127:17 131:19 133:11 152:20 153:9 167:1 gotten 140:24 governed 13:21 governing 4:8,11 8:13 10:22 13:22 168:19 government 86:9</p>	<p>governs 173:8 grade 98:4,7 grain 100:12 grasp 46:16 graza 131:20 158:20 great 60:14 99:14 greater 14:5 81:21 green 9:24,25 78:20 gregory 134:15 143:6 grounded 53:13,15 53:24 54:22 55:11 55:12,17 56:1 grounding 25:19 54:18 group 10:20 18:8,20 19:2 51:7 91:12 97:13 139:22 140:2 153:18,22 154:8,8 162:4 175:12,15 184:5 188:16 194:3 groups 154:15,20 growing 121:11 gsa 87:3 guardianship 167:22 168:2 guess 173:24 guessing 14:25 guesswork 15:23 guidance 44:8 45:15 45:18,20,22 46:7 guide 3:12,17,21 109:15,17,20 116:4 guidelines 126:14 134:18 guys 159:20</p>	<p>handling 108:6 happen 42:19 78:20 happened 96:22 111:1 happening 96:19 101:9 110:23 162:16 happens 135:5 164:5 hartford 20:25 havens 20:22 hazard 171:23 172:2 hazards 129:18 175:13 health 10:21 20:9,13 51:4,19,23 52:10 53:5 54:12,14,15,16 101:21 116:10 119:5,10,18,21 120:2,4 121:8 122:2 122:4 123:23 125:16,24 127:6 128:15 129:11 130:7,9 131:8,13 134:15,19 135:9,22 135:24 137:19,21 139:20 140:15 142:2 143:6,9 144:14 149:14,20 154:22 160:19 167:23 188:19,25 189:12 health's 101:24 healthcare 137:18 hear 11:17,22 55:11 72:24 91:19 108:6 115:15 140:11 166:15 180:20 187:22 189:18 heard 28:8 31:13,15 43:21 46:16 70:9 75:19,20 88:17 94:18 102:1 128:13 137:23 157:13</p>
		<p>h</p>	
		<p>h 20:22 halfway 78:15 hand 13:12 174:1 handle 101:4 107:24 173:25 handlers 172:18 173:9</p>	

<p>162:8 169:23 177:6 hearing 88:18 97:14 heat 130:20 heery 52:9 53:4 139:19 height 117:21 132:18 held 13:10 41:17 42:4 help 102:4 128:11 172:16 helpful 123:13 hernandez 92:4 herring 66:5 73:2 herrings 73:13 hgr 130:7 hi 87:25 98:20 high 92:3,18 94:4 95:20 96:1 97:19 98:1,8,14 99:18 101:16 107:16 109:5,10,25 110:13 112:25 133:4,7 152:3 higher 88:23 hirschler 58:14 59:14 64:1 67:16 68:8 70:4 71:21 72:10 76:4 138:10 161:25 162:10 165:5 173:19 183:21 190:21 191:5 historically 117:18 history 100:15 116:25 122:13 hoc 153:18 holes 148:21 holland 62:9 65:4 65:15 69:14 75:6 76:15 holland's 73:2 hollands 70:7 home 35:7,25 44:23</p>	<p>homebuilders 184:13 homeowner 37:8 homeowners 41:13 41:13 homes 42:1 hoover 62:9 65:4,15 69:14 74:11 75:6 76:15 hope 15:8 16:23 28:6 62:19 hopeful 159:7 horeis 130:6 horse 171:24 hospital 117:21 120:6,10,20,22 133:5,9 134:22 135:11 136:7,21 141:10 145:24 149:23 150:1 152:24 158:9 159:15,21 hospital's 158:15 hospitals 115:22 120:13,16 123:17 128:6,9 132:9 133:10 135:6,21 136:2 137:25 140:20,21,23 147:24 148:10 151:14 152:15 154:5 159:14 house 42:17 housing 46:13 166:22 167:4,7,10 167:16,25 168:4,20 169:20 172:24 175:24 176:13,17 180:12,23 184:25 houston 51:7 huge 146:1 hughes 20:23 human 167:12 168:2 169:25 171:13,16 172:21</p>	<p>175:14,20 176:17 humans 167:6,11,15 168:4,5,12,20 172:13,14,16,18 173:1 175:12,21,23 176:23 humble 134:8 humbly 132:19 hundred 81:11,18 81:25 82:3,10,20 83:8 87:7,10,16 102:25 135:2,2 148:2 hurley 102:11 109:3 110:4 hybrid 135:1</p> <p style="text-align: center;">i</p> <p>ibc 60:5 64:14 73:9 163:8 185:12,16,16 191:12 icc 48:17 135:19 153:17,19 156:2 iccpmg 26:22 idea 101:9 102:14 141:7 145:22 ideal 174:25 identical 32:17 185:13 identifiable 24:22 24:23 34:12,17 58:16 59:1,6 66:11 66:23 67:19,21,24 67:25 70:19 71:5,23 71:24 72:2,3 76:25 77:8 80:17,21,23 90:7,17 identification 113:9 identifies 5:20 identify 144:6 ifc 191:13 iffc 163:9 ignition 74:16,20,24 ignore 43:22 148:20</p>	<p>illustrate 171:20 image 110:18,22,22 110:24,25 images 110:6,17 imaging 99:13 immediate 152:24 immense 109:20 impact 38:6 93:18 104:10 128:19,25 impacted 48:12 impacts 40:22 impart 58:23 impeccable 122:12 implication 166:22 implied 167:5,12 172:21 175:19 implies 54:21 141:5 177:7 importance 99:8 167:14 important 7:12 43:11,21 49:1 97:18 99:20 101:25 116:11 124:15,22 125:20 167:6 168:11,23 176:21 importantly 102:2 109:23 impossible 60:17 68:12,17 70:13 impregnated 59:19 60:3,9,23 64:25 impregnation 64:8 improperly 183:1 improve 13:24 79:8 improved 119:22,24 120:1,1 150:9 improvements 102:22 inaudible 26:22 60:8 61:1 68:16 103:20 131:21,23 131:23 132:16,19 133:10 134:4 158:21 160:9</p>
--	---	---	---

<p>184:12 185:23 incapable 167:17 incident 93:2 108:8 110:10 include 26:1 86:5 93:1 105:21 168:16 included 26:4 45:1 72:18 76:8,9,10 166:20 181:11 includes 26:10 132:10 including 4:9 8:6 10:11 20:9 73:16 83:15 85:11 91:9 100:21 129:15 130:21 inconclusive 83:11 85:10 inconsequential 117:25 inconsistent 156:22 incorporated 51:7 79:14 increase 83:1,24 117:14,17,21 120:14 123:19,22 134:6,21,23 137:25 144:22 150:6 156:2 156:10 increased 120:9 124:20,21 128:10 129:15 135:3,4 increases 115:21 129:6 increasing 81:15 100:17 116:16 india 159:15 indicate 6:1 9:25 10:1 11:19 53:12 88:12 indicated 82:13 88:8 89:17 indicates 88:6,10 95:4</p>	<p>indicating 140:20 144:16 indication 142:9 individuals 20:1 21:6 178:24 indoor 40:19 industrial 169:7 industry 33:22,25 54:24 113:8 121:8 inevitably 144:21 inference 169:8 inform 3:2 41:14 information 3:11 4:22 18:19 23:4,23 27:7,18 47:12 51:10 51:25 56:3 57:10 58:7 61:6 62:18 74:13 75:23 79:17 80:7 81:8 85:7 89:16,25 91:24 93:2 93:19,25 97:2 99:13 103:2 104:5 105:21 107:23,23,24 108:7 108:7,12,19,20 109:4 110:12 111:2 151:22 155:19,24 175:10 179:11 180:4 initial 153:16 initially 89:21 initiate 182:1 initiated 181:21 initiates 112:14 initiating 42:2 initiative 112:8 injuries 136:1,15 137:6 injury 136:12 inmates 167:23 input 13:13 73:24 91:25 118:22 128:18 129:2 192:17 insert 144:7</p>	<p>insertion 14:24 56:5 inside 135:7 inspect 36:18 inspected 38:9 inspection 18:7,9,13 19:9 40:1 42:2 44:2 44:8,16 62:22 93:9 142:16 inspections 41:18 inspector 131:23 installation 24:17 24:20 26:9 28:14 38:17 41:2 43:24 44:2 48:10 92:23 93:16,22 94:6 96:15 103:21 106:22 112:14 133:18 installations 38:9,18 installed 24:18 25:16 28:15 31:12 33:16,17 40:13 92:4 92:25 108:17 112:9 installer 40:7,10,18 40:25 installing 28:17 instance 39:15 163:22 instances 164:3 institute 32:18 184:7 institutional 144:1 instructions 24:20 instrumental 18:11 18:19 insulated 53:13,14 54:22 55:11,17 insulating 25:11 insult 105:5 insurers 128:8 intact 151:25 integral 7:12 110:21 integrals 92:6 integrated 111:21 integrity 151:24</p>	<p>intelligent 105:6 intend 56:1 60:25 132:10 intended 5:2 95:1 98:16 144:3 150:17 173:12 intensive 136:21 intent 5:3 36:5 37:15 49:3 53:14,23 92:7 141:1 142:18 142:21 164:6,7 185:5 intention 46:19 54:17 107:2 168:17 intentionally 106:15 interact 98:14 interest 194:11 interested 195:16 interestingly 176:2 interface 72:20 74:21,24 76:11 interior 76:17 internation 68:9 international 52:10 53:5 58:15 59:15 64:2 67:17 70:5 71:22 72:11,20 74:20 76:5,11 96:10 100:22 104:25 108:4 127:20,22 128:3,22,23 138:11 139:20 153:17 156:7 162:1,11 165:6 173:20 181:4 183:22 184:25 190:22 191:6 internationally 176:12 interpretation 98:10 177:10 introduce 2:14,23 17:13 22:13 introduced 25:12 26:15 106:17</p>
--	--	--	--

[introducing - larry]

introducing 77:24 introduction 115:24 involved 19:11,12 involves 24:8 25:6 ipad 110:18 iphone 110:18 ironic 88:24 irrespective 60:25 iso 116:4 isolation 109:9 issuance 8:5 21:22 50:24 issue 8:4 9:8 10:23 11:23 18:12,25 30:9 33:25 34:2 36:21,25 37:16 38:16 42:23 43:12,22 44:11 47:20 53:7,7,11,25 54:3 59:17,25 73:12 82:17 84:22 87:21 94:19,20,22 96:17 101:12 104:2 109:8 110:5 118:19 128:17 130:2 133:19 147:22 148:1 149:12 151:7 153:15 163:20 181:10,19 182:5,15 182:20 188:5,16 191:7,23,24 192:9 issued 13:7 143:23 issuer 7:22 issues 2:23 14:6 31:14 36:7 46:15,21 59:16 93:14 101:8 111:7 112:23 124:3 141:18 149:22,24 162:12 188:15 189:1,3 item 59:16,21 60:10 60:10,22,22 94:22 100:14 149:13 161:9 169:22 items 169:3 170:19	<p style="text-align: center;">j</p> j 20:24 131:20 jacket 24:16 25:11 25:12 26:2,7,8,10 28:13,16,19,21 29:4 30:25 31:8,25 32:2 32:16,20 33:24 jacketed 27:20 jackets 26:21 jake 100:4,4 108:25 108:25 james 2:7 17:19 21:8 22:13,18 179:7 jams 132:17 january 136:5 jeff 46:12 180:11,22 jenga 118:3 jim 22:16 95:7,9 104:25 125:15 145:10 170:8,11 178:20 183:7,10 job 1:24 46:15 122:16 joe 75:6 107:9 166:7 171:8 175:3 193:25 john 20:3,3,5,15 21:2 62:9 65:15 join 18:3 19:13 20:3 20:21 joint 108:14 151:23 joseph 57:5,6 josh 87:25 89:10 judging 40:18 judgment 8:3 30:19 july 6:25 june 1:15 2:1 4:7 5:17 12:2 jurisdiction 89:18 107:18,19,22 125:17 134:17 143:10 144:4,11,13 144:24 jurisdictional 107:20,21	justifiable 125:5 justification 116:20 121:12 124:13 128:7 148:6,14,24 156:21 181:24 185:22 justified 83:22 87:12,17 117:9,17 123:21 justifying 124:8	knowing 28:19 knowledge 87:15 102:2 known 42:16 100:9 knows 148:5 koffel 79:13,13,23 80:11 84:8 89:17 90:10 94:15 107:12 118:14 141:15 145:10 146:4 149:9 163:15 165:14 168:25 170:11,14 173:22 174:8 177:3 191:25 193:21 krane 27:4,23
	<p style="text-align: center;">k</p> keep 151:24 keeping 131:11 160:1 kelly 115:5,17 121:5 147:16 187:9,24 ken 41:22 55:9 84:21 85:1 158:5 164:10,14 178:16 192:2,6 kept 134:25 kerry 2:15 17:13,18 21:11 kevin 147:1 key 72:13 125:20 keynote 100:20 kicking 98:15 kimberly 1:22 195:22 kind 53:7 121:8 141:4,8 144:7,9,17 148:24 kinds 156:20 klein 119:5,8 141:21 141:25 149:15,19 184:23 188:18,23 knew 32:11 know 26:14 30:16 42:3 43:1 55:12 65:2 69:19 75:15 89:20 110:10 111:4 122:4 132:21 140:21 151:22,23	<p style="text-align: center;">l</p> lab 26:13 73:3 lack 13:3 25:23 93:24 128:7,13 136:8 186:19 lacking 93:24 157:5 ladies 2:6 23:11 51:17 57:18 79:25 179:20 185:2 lamothe 29:10,11 42:9,9 landmark 159:21 language 37:10,24 53:16 62:20 92:17 102:17 106:16,19 121:16 141:1,3 143:8 144:3,8,12,18 145:3,6 163:6 177:13 large 98:2 102:15 110:19 124:8 127:2 131:3 133:3,11 larger 126:16,17 127:1 130:24 133:6 148:21 155:8 157:15 177:15 largest 109:24 larry 48:16 112:21 135:16	

[las - malta]

<p>las 1:14 2:1,22 latest 85:21 lathrop 95:7,9 170:8 170:11 174:8 178:20 183:7,10 latitude 131:12 law 45:18,19 laying 46:15 lc 26:5 27:8,13 28:8 28:8,11,11 33:25 lead 93:25 104:6,20 108:12 leader 18:9 leadership 19:8 leading 45:25 129:16 leads 7:11 126:4 lean 113:5 learning 101:11 leave 13:14,18 79:4 left 44:13 63:4 75:12 90:2,3 121:8 legitimate 26:23 182:1 length 93:5 lessoning 131:1 lessons 101:11 letter 23:19 45:24 51:24 58:3 80:5 180:2 level 99:1,1 128:10 128:15 133:7 167:14 169:25 levels 133:5 liaison 29:13 30:15 31:16 licensing 126:15 lie 172:13 lies 172:13 life 20:13 79:11 80:1 80:5 109:16 122:7 123:24 125:17 131:22 143:13,18 144:19,22 160:10 167:12,12 168:6,12</p>	<p>168:16,19 169:24 170:3,18 171:13,13 171:17 172:5,21,25 173:6 174:4 175:10 175:11,14,16,20,20 176:22 light 78:20,20,21 116:19 120:12 lighting 142:17 lightning 30:10,12 31:5,25 lights 3:4 likewise 167:25 limit 11:14 120:17 124:15 138:2 limitation 124:18 limitations 117:15 124:16 limited 8:8,19 85:8 93:15 119:19 130:22,22 132:10 136:17,25 limiter 126:2,6 127:12 limiting 121:11 130:14 limits 178:13 linda 2:12 line 162:24 168:11 linear 117:7,10 linked 13:8 list 72:23 listed 24:16 26:21 26:25 56:1 listening 29:21 134:12 listing 31:20 little 39:15 88:23 91:23 109:3 114:6 153:7 162:14 lives 122:13 living 124:12 145:20 load 81:16,25 82:2,7 82:10,13 83:7,13,21 83:24 84:13 85:5,15</p>	<p>85:23,24 86:7,10 87:7,11 88:6,16,22 92:3,19 97:20,23 98:5,6,6 120:11 124:20,21 131:2 loads 86:2 local 44:13 113:2 locate 51:9 located 23:3 57:9 79:16 143:17,19 144:17,25 179:10 location 39:20 72:18 120:17 142:9,12 144:6 150:15 169:5 locations 121:15 142:19 logic 117:4 logical 175:18 london 100:23 109:25 long 12:18,18 30:5 39:21,22 60:8 72:22 110:3 145:16,18,25 157:24 181:23 182:22 longer 6:9 17:7 22:5 50:15 69:18 157:16 177:16 longstanding 155:15 look 15:25 46:22 48:3 62:20 64:3 82:17 96:21 99:7 108:10 110:9 113:10 123:16 125:1 153:8,22 154:1,3,9,24 155:5 155:17 160:13 168:3,5 looked 100:24 126:25 140:16 155:25 160:6 169:19 looking 65:23 69:21 153:24,24 155:15</p>	<p>155:15 loss 6:18 128:11 171:13 lost 6:16 13:9 lot 97:14 100:15 109:23 111:8 122:6 122:16 151:18 170:14 174:18 loved 106:3 lovell 123:3 151:3 low 26:7 133:17 lowe 1:22 195:22 lower 155:10 lowering 116:15</p>
m			
<p>m 1:22 21:1 195:22 machine 195:8 machines 78:10 main 128:17 maintain 83:12 122:11 148:20 153:5 181:3 maintained 152:1,6 157:5,19,20 maintaining 116:13 maintenance 18:7 18:10,13 19:10 37:7 43:12 93:10 116:16 133:19 151:24 152:2 major 31:23 36:6 40:2 59:16 116:14 137:1 majority 7:23 11:3 114:1 125:24 138:19,25 161:8 maker 5:2 12:22 17:6 22:3 50:14 101:15 105:9 187:3 193:11 making 7:25 60:2 64:23 124:23 malta 20:23</p>			

[man - microphone]

<p>man 136:1 manage 92:10 management 92:9 93:21 manager 122:2 managing 14:6 102:4 mandalay 1:13 3:3 mandate 107:15 mandated 93:16 mandating 94:3 107:21 mandatory 43:7 mankind 160:11 manner 9:4 manning 13:17 manufacture 60:2 63:5,7,9 64:5,7,9 manufacturer 59:25 manufacturer's 24:19 maps 140:19 141:2 marcelo 58:14 59:14 64:1 67:16 68:8 70:4 71:21 72:10 76:4 138:10 161:25 162:10 165:5 173:19 183:21 190:21 191:5 march 26:1 176:3 marine 20:22 market 25:13 26:17 marketing 116:7 marketplace 32:25 33:7 marking 142:17 marshal 115:6 147:17 187:10,25 marshal's 117:18 marshall 184:23 marshals 115:7,18 115:20 121:7 127:18,20,22 128:3 128:23 147:2,3,18 187:11 188:1</p>	<p>marty 135:22 maryland 21:2 79:14 184:24 material 30:3,5 45:3 63:19 122:8 144:5 155:16 166:19 167:2 172:7 175:10 materially 38:4 materials 20:11 57:4,20 58:2 61:23 62:23 68:13 74:16 74:20,22,23,25 130:23 194:2 math 114:6,9 138:24 matrix 110:19 matter 30:13 32:12 46:19 93:12,15 100:25 148:8 maureen 2:17,17 maximum 119:17 120:14 130:13,15 150:6 171:22 mclain 96:8 mclaughlin 137:17 mean 63:22 65:5,8 156:18 157:16,20 meaningless 60:19 means 53:25 59:20 59:22,25 60:4,7,11 63:4,5 64:5,6,8 65:1 65:8,9 74:15,15,19 89:22,22,25 92:1,12 96:20 101:10 107:12 114:11 134:7,8 142:4 157:15 171:18 172:19 178:21 181:13,16 183:7,10 184:6 185:9 measurable 93:17 measure 155:14 measures 129:8 130:1 157:24 mechanical 119:25 136:6,17 155:4</p>	<p>mechanism 36:22 42:2 medical 120:1 meet 8:2 60:13 62:25 63:7 68:13 162:25 163:2 meeting 1:12 2:11 3:16 4:7 5:2,16,25 6:14,23,24 7:1,9,11 7:13,20 8:8,19 9:22 10:9,24 11:4,5,13 12:1,7 13:15,21 14:1,9 16:24 21:10 21:19 22:20 23:6,15 50:21 51:12,21 54:15 57:12,23 73:24 79:19 80:3 81:9 91:25 92:14 101:2 118:25 131:8 137:21 179:13,24 194:9,12 meetings 4:10 118:7 meiser 145:10 member 2:9 8:24 9:1 17:22 19:20 20:15 22:13 31:17 36:3,4 42:11 48:17 57:5 77:25 95:6,10 130:8 134:18 170:7 170:12 184:5 member's 13:9 members 6:10 8:20 9:1,6 10:20 11:1,3 11:10 13:6 14:11 20:21 23:21 38:1 58:5 78:25 83:14 93:13 168:22 membership 7:14 7:20 14:3 17:11 27:1 28:7 41:3 44:17 84:5 87:20 94:7 99:1 123:14 125:7 151:6 155:22 memories 105:23</p>	<p>mention 76:8 99:11 99:17 mentioned 31:20 63:4 99:9 116:21 123:20 133:25 151:8 159:3 160:8 166:21 188:8 189:1 191:25 mentions 37:11 mercantile 84:18,20 85:3 89:19 164:10 164:15 178:17 192:2,7 merit 102:16 merits 48:6 message 160:11 messed 184:9 met 94:2 98:25 metal 26:10 meter 88:13,14 method 31:18 32:15 44:5 162:21,22 163:23,24,25 191:10,10 methodology 116:19 methods 27:15 32:3 173:13 mic 10:3 77:5 84:21 michael 2:19 51:6 microphone 9:19,21 24:4 28:3 29:8 32:7 33:11 35:4,22 39:2 41:7,21 42:8 43:18 44:20 46:11 47:8 48:15 52:8,25 54:10 55:8 58:13 59:13 62:8 63:25 65:14 67:15 68:7 69:13 70:3 71:20 74:10 75:5 76:3,14 80:14 84:23 86:20 87:24 89:9 91:4 96:7 97:11 98:19 100:1,2 102:10 103:15 104:24 106:9 107:8</p>
---	---	--	--

[microphone - motion]

108:2,24 111:10 112:20 113:14 115:4 121:4,24 123:1 125:14 127:16 130:5 131:18 134:14 135:15 137:16 138:9 139:18 141:23 143:5 145:9 146:25 149:17 151:1 153:12 156:5 158:4,19 159:8 160:17 161:24 164:12 165:4 170:10 171:7 173:18 174:7 175:2 180:10 183:9,20 184:3,11,22 187:8 188:20 189:10,10 190:20 192:4 microphones 9:24 middle 15:5,21 mike 121:25 178:18 milke 22:13 million 25:15 mind 95:6 107:14 119:3 160:1 170:6 minimum 37:4 minnesota 23:1 127:19 minor 53:7 136:14 137:6 minute 2:24 11:16 11:19 78:2,3 minutes 11:13 72:16 72:16 77:15 78:2 103:8 122:10 191:8 misery 132:18 misplaced 79:4 missing 102:25 186:25 mission 99:11,20 misunderstanding 144:10	misusing 163:13 mobile 3:11 modeled 185:8 modeling 128:20 157:6 modern 129:21 modes 18:18 modification 99:4 174:21 modify 134:1 molding 18:22 moment 24:10 money's 148:18 monitor 97:1 103:4 103:5 108:18 110:6 111:21 monitored 110:20 monitoring 92:5,20 92:22,24 93:6,7 94:3,25 95:24 96:17 97:16 100:7 101:13 102:14 105:7 106:7 108:10 109:19 110:1 monitors 105:16 108:17 monoxide 42:18,21 morgan 102:11 109:2 morning 2:6 17:20 18:1 22:23 35:5 41:8 51:4 57:3,17 79:11 98:20 99:5 106:10 107:9 127:17 131:19 179:5 192:10 motion 4:25 5:2,3 5:24 6:2,6,6 9:10,15 9:17,19,25 10:2,5 10:18 11:2 12:14,15 12:16,17,18,21,22 12:22,23,24,24 13:4 13:4 14:15,18 15:3 15:4,6,11,15,16,17 15:19,22,22 16:3,6	16:7,8,11,13,19,20 16:21 17:6,8,10 21:16 22:3,5,7,12 23:8 24:7,11,12,13 24:22 25:4,6,23 27:25 28:2,6 29:17 29:19 32:9 33:13 34:12,15,16,18,20 34:24,25 35:1,3,12 35:21 36:1 37:13,17 37:25 38:14,24 39:1 39:5 41:4,10,23 42:6 43:16,20,25 44:23 46:18 47:2,6 47:10 48:20 49:8,16 49:17,21,23 50:4,5 50:6,14,15,17 51:14 52:3,7,14,16,17,24 54:7,9,13,16,21,24 55:1,6,15,21 56:8,9 56:12,14,20,21,22 57:14 58:9,12,21,22 58:25 59:12,15 61:7 62:5,7,12 63:21 64:2 65:11,20 66:7 66:11,21,22 67:2,4 67:10,11,12,14,23 68:6,10 69:10,12,15 69:25 70:6,10,11,11 70:16,18 71:3,4,7,9 71:15,16,17,19 72:1 72:9,12 73:17 74:7 74:9,12 75:2,9,12 75:25 76:6,16,21,24 77:6,7,9,11,18,19,20 79:21 80:13,17,20 81:6 84:5 85:2 86:19 87:4,20 88:2 89:8,15 90:6,15,16 90:19,21 91:1,3,7 91:12,23 94:8,11 95:15,17 96:4,6,13 96:15 97:13 98:24 99:4,22 100:5,6,13 101:15 102:7,13	103:11,17 105:2,9 105:22 106:6,12 107:11 108:5 109:1 111:16 112:17,22 114:4,13,14,19,21 115:1,3,7,11,18 118:12 119:13,14 121:1,3,6,22 122:3 125:18 126:21 127:13,25 130:10 131:14 132:3 134:16 135:13,17 137:20,22 138:6,12 138:17 139:3,3,7,9 139:14,16,23 140:3 140:9,13,16 141:12 141:19 142:3 143:1 143:4,8 145:12 146:3,7,8,15,17,22 146:24 147:4,8,19 149:6,21 150:23,25 151:4,8 153:14 156:8,16 157:25 158:7,7,25 159:11 159:11 160:14,23 161:10,10,14,16,21 161:23 162:3,4,9,11 164:1,16,25 165:2 165:10,18,19,21,23 166:3,5,9,11 167:15 168:10,15,18,23 171:4,6,9 173:20 174:11,12 175:4 176:14,24 177:2,19 177:20,22,24 178:4 179:15 180:6,9,16 180:24,25 181:3 182:5,6,7,24 183:11 183:17,19,23 184:1 184:8,14,16 185:1 185:20 186:1,3,8,12 186:13,16,18,23,25 187:2,5,12,16 188:10 189:2,8,9,13 189:17 190:3,5,6,10
--	---	---	---

[motion - nfpa]

<p>190:12,17,19,24 191:6,17 192:7,15 192:16,21,22,24 193:1,6,8,9,10,13 motions 4:3,10,18 5:8,10,12,12,19,21 5:22,23 6:17 7:18 7:19 10:8,11 11:24 11:25 12:4,12,14 14:3,19 23:5,25 24:3 51:11 57:11 79:18 80:10 123:13 179:12 motivated 37:25 mouth 70:8,9 112:11 move 16:6 19:17 21:24 22:9,11 34:13 35:7 49:15 50:8 51:1 52:12,15 54:25 56:7,24 58:15 66:19 67:17 71:2,22 84:14 99:20 114:11 139:22 146:6 159:9 162:1 179:3 180:13 186:24 187:7 189:17 190:22 192:20 193:15 moved 136:25 174:22,23 movement 113:10 153:16 movements 156:20 moving 80:16 91:6 189:20,21,23 190:2 mris 135:4 msl 137:17 mt 136:7,21 mu 134:8 multifamily 46:13 180:12,23 184:25 multiple 13:14 60:5 98:1 154:14</p>	<p style="text-align: center;">n</p> <p>n 2:4 nafra 59:15 64:2 67:17 68:9 70:5 71:22 72:11 162:1 162:11 165:6 190:22 191:6 name 9:13,16 13:9 24:5 27:25 28:4 29:10,11 35:5,24 38:24 41:8 54:7,11 62:5 69:10 74:7 85:1 86:17 96:4 98:21 119:8 121:1 123:2 127:17 130:6 131:19,20 141:24 143:2,6 149:18 150:23 151:2 164:25 166:7 171:4 171:8 180:11 183:17 189:8 192:15 195:19 nasm 116:19 117:4 nation's 45:25 national 1:9 22:24 23:13,18 25:21,24 25:24 26:12,25 29:12 33:3,19,20 35:6,25 36:3,23 37:2 39:23 41:5 44:12,14,22 45:17 46:13 47:16,19,24 48:5,9 115:19 121:6 147:2,17 180:12,22 184:12 187:10,25 nationally 47:19 nations 133:25 160:5 natural 19:4 nature 172:22 175:21 nc 27:9,11 47:17 nclc 25:24</p>	<p>nearest 2:25 nearly 105:17 106:2 151:17 necessarily 10:14,25 31:21 necessary 5:23 11:16 12:14 17:4 135:8 164:21 necessity 132:25 need 8:24 13:5 14:1 14:1 30:17 37:16 42:14,15 44:8 46:7 53:12 56:15 63:17 63:18 65:25 66:2 69:22 75:16 88:20 92:23 93:23 105:24 105:25,25 106:3,5 107:22 110:19 113:25 114:9 125:2 127:5 132:20,23 142:18 143:16 144:24 152:3 167:24 168:5 174:21 needed 45:15 46:23 55:10 93:7 136:3 needing 124:10 needs 29:4 37:15 46:23 48:10,24 53:16 64:16 72:23 89:20 94:2 141:3 151:11 174:22,22 176:7,18 negative 61:19,25 93:14 neither 45:11 162:22 182:14 195:15 nevada 1:14 2:1,22 195:2 never 61:4 65:10 104:8 168:17 181:11 new 11:22 14:12 15:10 20:23 28:8</p>	<p>30:3 33:15 35:9,14 36:6 38:8,17 39:20 41:4 45:14 47:12,23 49:10,19 58:18 61:17 66:13,25 69:1 74:22 91:15 92:2,3 92:17,18 95:21,24 95:25 96:1 104:20 107:16 114:17 117:3 119:23 123:11 129:19 136:7,22 140:7 143:8 144:3,8,12 145:18 146:13 147:21 148:3,9 149:1,4 150:1 151:8 154:4,4 156:23,24 159:22 169:6 181:6 181:7 182:20 188:2 188:6 newer 145:25 news 106:1 137:3 nfpa 2:10,17,18 3:8 3:9,16,18,22,24,25 4:1,5,6,6,8,10,12,13 4:13,23 5:1,11,16 5:18 7:8,10,12,13 7:15,16,22,23 8:4,7 8:18,24,25 10:10,12 10:13,14,15,17,18 10:19,20,22,24 11:7 12:1,3,3,5,8,9,12 13:14,17,21,22,22 13:25 14:2,9,10,13 14:24 15:16,24 16:24 17:6,7,7,9,10 17:24 18:6,21,24 19:1,2,3,23,24 20:20 21:4,14,17 22:1,1,4,6 23:4,4,6 23:18 24:3 25:20,20 27:16 28:12 29:13 30:13 33:18,19 34:4 47:17 50:8,13,14,16 50:19,20 51:10,10</p>
--	---	---	--

[nfpa - officer]

<p>51:12,22 52:7 56:24 57:10,10,12,25 58:12,15 72:19 73:9 74:15 76:5,9,10 78:9 79:17,17,19 80:5,13 82:18 84:4 85:2,13 88:23 94:7 101:2,20 106:21 109:18 111:20 115:20 116:2,25 123:11 128:5 132:11 133:8 153:20 155:22 162:13,17 163:5,6 163:12 164:14 166:18 168:3,9,13 168:15,19 170:18 171:11 172:1,25 173:2,10 174:3 175:8,15,22 176:3,4 176:20 177:11 178:6 179:11,11,13 180:1,9 181:1,8,12 181:14,21,21,25 182:2,11,15,21,23 185:14,25 187:4 188:5 189:4 191:11 191:13,14 192:7,9 193:12,22 194:9 nfpa's 12:9 79:8 124:7 135:21 nfpa.orb 58:7 nfpa.org 52:1 nhp 39:10 nice 123:13 nicolello 115:5,17 121:5 147:1,16 187:9,24 night 109:11 nist 97:4 104:13,14 104:15 nitmam 5:3 nitmams 5:8,11 30:22</p>	<p>non 47:17,17 142:13 175:13 noncombustible 130:23 north 151:3 note 2:24,25 10:6,15 14:19 17:3 92:16 95:3 118:18,20 142:21 noted 3:1 27:8 81:24 85:14 194:15 notes 170:19 notice 5:3 7:4 8:15 14:3 17:5 59:17 notified 17:7 22:4 noting 83:20 november 135:23 136:19 nuclear 122:5 number 14:8 23:8 30:10 51:14 57:15 71:10,15 77:10,12 78:11 79:21 81:21 92:13 102:16 111:25 112:1 118:6 121:11 124:1,6,7,22 125:2,3,4,5,6 130:18 134:20 154:12,13 157:9 179:16 186:4 192:25 193:2 numerous 87:18 94:5 96:17 nurse 155:2 nwg 31:4</p>	<p>occasionally 78:19 occupancies 20:14 82:7 84:18,21 85:4 85:15 86:4 88:5 116:11 119:10,18 119:21 130:9 142:2 149:14 164:10,15 166:23 169:7,8 170:4 172:2,24 177:7 178:16,18,20 178:23 188:25 occupancy 20:10 82:7,10,13,21 83:1 85:14 86:1 95:22,23 112:24 113:5 119:5 120:2,5 131:1 134:23 166:20,21 166:25 167:11 169:9,10,13 170:2 171:20,23 174:25 176:5,5,7,10,19 177:7,9 occupant 81:15,18 81:25 82:2 83:7,21 83:24 84:13 85:5,23 86:7,10 87:6,11 88:6,16,22 92:3,4 92:19 97:20,23 98:5 98:6,6 99:11 112:6 120:9,11 124:15,20 131:2 141:5 occupants 92:10 93:18 96:23 97:2 99:15 102:2,3,16,16 108:19 112:8 128:9 129:7 173:9 176:7 176:17 occupied 100:11 occupy 167:20 occurred 122:17 184:19 occurring 137:10 occurs 14:21 october 5:13</p>	<p>odd 152:23 offer 27:4 37:21 45:9 53:19 61:10 68:20 73:19 94:15 118:14 128:10 141:15 163:19 168:25 169:17 183:4 191:20 offered 182:9,21 office 81:20 82:4 86:13 126:24 officer 2:6 11:21 12:13,20 14:5 21:11 21:14 22:18 23:24 24:1,9,21 25:2 27:3 27:23 29:7,16,20 32:4,6 33:10 34:7 34:11 35:11,18 37:20 38:21 41:6,20 42:7 43:17 44:19 46:10 47:7 48:14 49:6,14 50:12 52:2 52:4,13,17,22 53:2 53:18 54:4 55:4,19 55:22 56:6 58:8,10 58:20 59:10 61:9 62:2,11,13 63:24 65:13,17,21 66:9,18 67:22 68:4,19 69:7 70:2,17 71:1,25 72:6 73:18 74:5 75:4,8,10 76:2,13 76:23 77:4,23 78:6 80:9,11,20 81:2 84:2,7,23 86:15 87:1,22 89:7,12 90:5,12 91:11,19 94:10 95:13,16 96:2 96:12 97:10 98:18 99:25 102:9 103:14 104:23 106:9 107:7 108:1,23 111:10,14 112:19 113:13,16 113:18,22 115:11 118:13 119:12,15</p>
	<p>o</p>		
	<p>o 2:4 obligated 172:22 observe 92:10 obstructions 143:22 obtained 99:13 obvious 38:5 obviously 94:13 156:22,24</p>		

[officer - participation]

<p>120:24 121:23 122:25 123:6,9 125:13 127:15,24 128:2 130:4 131:17 132:1 134:9,13 135:14 137:12,15 138:8,12,16 140:2 140:11 141:14,23 142:24 145:8 146:2 146:6 147:7,14 149:8,17 150:21 153:11 156:4 158:3 158:18,22 159:1,8 160:16,22 162:3,8 163:14 164:12,23 165:7,13,17 166:10 166:15 168:24 170:10 171:2 173:17 174:6,10 175:1 176:25 177:17 178:8,25 179:3,19 180:5,7,15 180:20 183:3,9,15 184:2,10,21 186:6 186:11 187:16,22 188:12,20 189:6,17 190:24 191:3,19 192:4,13,20 194:7 offices 86:8 official 7:22 officially 194:8,13 officials 103:24 offset 128:11 oftentimes 152:2 oh 193:9,16 ohio 184:5 oil 136:22 okay 14:12 24:21 38:21 55:22 103:14 139:15 146:6 158:18 159:12 160:22 192:20 193:9 old 158:10</p>	<p>oliver 87:25 omega 24:6 26:15 26:18 29:15 32:8 once 9:9 32:24 99:21 112:13 113:7 158:15 192:9 ones 59:5 106:3 ooo 2:5 open 9:10 27:24 38:23 54:6 62:4 69:9 74:6 86:16 96:3 120:25 121:9 142:25 143:14 144:2,15 150:22 164:24 171:3 183:16 185:3,19 189:7 192:14 opening 97:25 100:20 openly 121:13 operate 93:5,6 operates 103:23 operating 10:13 13:24 operation 38:2 93:23 94:1 112:14 112:14 156:14 operations 96:25 opine 95:1 169:23 opines 100:25 opinion 82:24 83:19 133:24 134:8 141:16 opponent 76:7 opportunity 102:21 118:6 182:13 oppose 28:5 99:22 137:22 opposed 15:13 114:4 115:20 128:4 134:8 138:22 141:7 141:8 opposite 88:17 opposition 10:1,5 33:13 43:20 47:10</p>	<p>98:23 99:5 103:10 106:12 129:3 130:10 146:22 optimum 99:10 options 54:18 order 4:5 8:25 11:12 11:24 12:17 23:8 51:14 57:14 62:16 79:21 171:16 172:16 173:23 179:15 ordinary 171:23 172:2 organization 3:13 9:14,16 organizations 26:24 45:25 47:14 organized 10:20 oriented 104:16 origin 137:1 original 25:23 39:6 85:22 126:9 129:10 185:2 originally 185:5,6 ors 135:1 osb 63:15 outcome 81:10,13 168:17 outdated 85:8,9 outdoor 40:20 outset 9:7 outside 3:10 44:11 44:25 157:13 170:18 174:19,19 outstand 28:10 outstanding 153:21 overestimated 81:22 overload 108:7 111:2 overmeiren 153:13 oversee 167:16 overseeing 175:9 oversight 175:25 owen 77:25</p>	<p>owensboro 122:1 owners 145:14</p> <hr/> <p style="text-align: center;">p</p> <hr/> <p>p 2:4 p.m. 194:15 p3 20:5 package 109:10 153:25 155:18 page 3:12 23:4,23 51:10 52:1 57:10 58:7 60:10 79:17 80:7 179:11 180:4 pages 1:25 4:23 12:5 44:10 paid 156:14 painted 62:24 paints 63:6 pane 37:5 panel 37:6 panels 63:15 panicked 172:11 paragraph 43:6 59:18 95:3 paraphrase 88:2 part 6:3 7:12 24:22 24:23 27:14 28:16 34:12,17 58:16 59:1 59:2,6 62:22 63:3 66:11 67:18,19,21 67:24 68:1 70:19 71:5,23,24 72:2,3 75:13 76:25 77:8 80:17,21,23 85:17 90:7,17 109:9 153:15,17 154:7,7 154:14 155:17 164:20 194:12 partial 66:24 participant 3:19 participants 3:18 participating 9:12 10:8 participation 194:11</p>
--	--	---	---

[particular - pleased]

<p>particular 10:20 25:17 33:5 70:10 100:11 125:6 132:22 133:14 145:6 153:16 163:18 164:3 185:10 particularly 38:2 132:5,11 134:1 142:15 156:11 partitions 142:20 parts 4:20 116:13 party 63:6 195:17 pass 7:2 148:9 176:24 passage 140:17 passed 6:18 50:6 56:22 61:18,24 138:25 passes 15:3,18 58:22 139:14 161:7,21 166:3 186:23 190:3 190:17 193:6 passing 181:2 passive 116:13 path 142:14 patience 17:1 134:12 patient 54:19 116:18 121:10,18 124:10,18 125:3 126:13,16 129:6 131:1,3 137:4,24 138:4 148:22 150:13 152:20 154:19,23,25 157:11 160:8 patient's 130:24,25 patients 116:12 120:6 122:15 136:11,13,19 137:3 144:23 157:9 167:22 paul 28:4 33:12 39:3 43:19 47:9 95:18</p>	<p>100:4 108:25 paul's 100:4 108:25 pediatric 136:20 penalized 148:11 penetrate 94:24 95:5 penetration 94:21 penetrations 107:13 pennel 18:2 people 36:11 42:6 43:7 92:19 95:25 100:11 101:9 102:4 106:2,2 108:9 133:16,24 135:20 136:24 137:5 163:12 percent 132:22 148:2 156:9 percentage 120:9 performance 26:4 32:14 39:22 40:16 40:24 41:22 48:8,11 55:9 74:17 93:23 94:1 103:22,25 104:16 111:24 112:16 152:14 158:5 performed 27:14 41:18 performing 44:6 period 19:22 73:10 74:7 121:18 157:1 permanent 45:10 permissible 53:16 permit 29:3 43:13 120:14 permitted 6:7 95:2 107:19 119:17 143:13 150:6 169:15 permitting 44:15 person 3:6 5:25 81:11,12,14,18 82:1 82:3,10,15,15,20 83:9,22,25 85:16,19</p>	<p>87:8,11,13,16 88:7 88:14,14,15 105:11 131:23 personal 19:8 83:18 personally 31:16 personnel 167:24 persons 7:24 97:21 perspective 101:23 101:24 119:6 141:22 149:16 164:11 170:9 pertaining 4:18 12:4 pete 194:1 peter 20:24 52:9 53:4 peterkin 139:17,19 140:14 petition 8:10,11,13 8:15 11:4 pew 37:3 pharmacy 155:11 photograph 145:1 phrase 107:17 physical 32:19 pick 153:6 pieces 118:4 pipe 30:2,2 piping 29:25 33:21 40:5,7 place 45:22 46:20 48:7 98:15 100:7 106:7 110:2,22 125:20 131:6,14 140:22 148:19 152:5 182:11 195:4 placed 144:21 placement 185:10 places 41:12 169:6 plain 32:2 plan 11:14 143:16 144:16,17,20 145:1 plans 109:15,16 126:25 127:8 142:22</p>	<p>playing 118:3 please 2:25 3:9 10:7 14:19,20 16:15 17:3 18:3 19:13 20:3 24:4,10,11 25:3 27:25 34:21 35:4,20 37:17 38:24 49:24 50:1 52:8,14,23 54:7,10 55:19 58:13 59:11 61:6 62:5,8 65:10,18 67:5,15 68:5 69:10,13 70:16 71:11,20 72:8 73:17 74:7,10 75:5 76:14 76:20 77:12 78:4,25 80:14 81:3 83:16 84:2 86:17 90:23 91:4,20 92:16 95:7 96:4,7 98:19 100:3 102:10 104:24 108:24 111:15 114:3,5,22 115:4,16 118:15 121:1,4 125:14 127:16 131:18 134:14 135:15 138:9,22 139:11,18 140:12 143:2,5 145:9 146:18,25 147:15 149:10,17 150:23 151:1 156:5 158:4 158:19 159:9 160:17 161:3,9,18 162:9 164:12,25 165:25 166:16 169:1 171:4,7 176:24 178:1 180:10,21 183:5,17 184:3,9,11,20 186:3 186:20 187:8,23 188:21 189:8,10,25 190:14,20 191:4 192:15 193:3 194:3 pleased 19:25</p>
--	---	---	---

[pleasure - prevent]

<p>pleasure 2:8 22:19 plymouth 23:1 plywood 63:15 podium 98:2,12,12 point 17:12 31:23 33:22 36:2 37:1 43:8 44:24 45:10 48:25 58:21 65:3 68:11 76:7 95:19 96:24 106:19 124:14 157:2 168:18 169:3 170:16 182:12 pointed 83:3 107:4 191:12 pointer 106:21 pointing 182:8 points 45:7 policies 46:2 polyethylene 31:9 poorly 49:5 population 81:23 138:5 167:17 168:1 168:6 portion 22:19 28:13 35:13 40:6 98:4,8 114:15 115:13 146:11 147:5 194:9 portions 35:8 49:9 49:18 58:17 66:12 66:24 91:8,13 115:8 139:4,24 140:1,4,6 146:9 147:9 161:12 187:13,18 190:7 position 10:18,23,25 11:2,6,9 14:16 27:5 28:21 37:22,23 53:20 61:11 68:21 73:20 75:21 83:6,17 94:16 95:8 118:15 142:11 148:15 149:10 163:16 169:1 183:5 191:21 positions 11:11</p>	<p>positive 93:17 possibility 124:24 possible 14:7 possibly 37:8 97:25 124:1 post 86:8 93:2 117:24 posted 3:25 4:12 140:19 141:3,9 142:22 176:3 posture 27:17 potential 92:8 98:9 128:19 potentially 124:20 powerpoint 110:15 practical 153:3 176:22 precedent 177:13 predict 117:12 162:20 preface 9:12,18,20 premature 29:2 34:3 94:4 105:16 premise 116:17 premises 106:22 premium 99:10,18 prepared 7:15 preparing 109:14 prescribed 24:18 32:15 173:16 prescriptive 107:1 present 6:10 7:24 8:20 14:1 17:16,25 19:25 22:24 25:14 32:15 44:15 51:5 57:4 79:12 93:16 149:9 163:15 179:6 187:3 presented 9:10 14:4 17:21 23:9,13 27:7 30:21 31:23 51:15 51:19 57:15,20 79:22 80:1 85:6 109:4 110:12 148:23 179:16,21</p>	<p>presenter 75:11 presenting 48:5 presents 27:20,21 preservation 167:18 preside 22:10,19 president 2:18 127:18 presiding 2:6 11:21 12:13,20 14:5 21:11 21:14 22:14,18 23:24 24:1,9,21 25:2 27:3,23 29:7 29:16,20 32:4,6 33:10 34:7,11 35:11 35:18 37:20 38:21 41:6,20 42:7 43:17 44:19 46:10 47:7 48:14 49:6,14 50:12 52:2,4,13,17,22 53:2,18 54:4 55:4 55:19,22 56:6 58:8 58:10,20 59:10 61:9 62:2,11,13 63:24 65:13,17,21 66:9,18 67:22 68:4,19 69:7 70:2,17 71:1,25 72:6 73:18 74:5 75:4,8,10 76:2,13 76:23 77:4,23 78:6 80:9,11,20 81:2 84:2,7,23 86:15 87:1,22 89:7,12 90:5,12 91:11,19 94:10 95:13,16 96:2 96:12 97:10 98:18 99:25 102:9 103:14 104:23 106:9 107:7 108:1,23 111:10,14 112:19 113:13,15 113:18,22 115:11 118:13 119:12,15 120:24 121:23 122:25 123:6,9 125:13 127:15,24 128:2 130:4 131:17</p>	<p>132:1 134:9,13 135:14 137:12,15 138:8,12,16 140:2 140:11 141:14,23 142:24 145:8 146:2 146:6 147:7,14 149:8,17 150:21 153:11 156:4 158:3 158:18,22 159:1,8 160:16,22 162:3,8 163:14 164:12,23 165:7,13,17 166:10 166:15 168:24 170:10 171:2 173:17 174:6,10 175:1 176:25 177:17 178:8,25 179:3,19 180:5,7,15 180:20 183:3,9,15 184:2,10,21 186:6 186:11 187:16,22 188:12,20 189:6,17 190:24 191:3,19 192:4,13,20 194:7 press 16:11,14 34:19 34:21 49:22,24 56:13,15 67:3,5 71:8,10 77:10,12 90:20,22 114:3,4,20 114:22 138:21,22 139:8,10 146:16,18 161:15,17 165:21 165:24 177:22,25 186:17,20 189:22 189:24 190:11,13 192:25 193:2 pressing 186:4 pressure 19:1 59:20 60:1,24 64:6,10 pretty 140:23 148:14 prevent 26:7 30:12 144:3 163:12 171:13 173:13</p>
--	--	---	--

[prevention - provisions]

<p>prevention 173:6 prevents 33:17 preview 97:12 184:5 previous 12:16 33:19,20 62:18 63:3 70:11,11 75:19 115:10,14 123:22 139:6 147:6,11,20 147:25 148:1,10 155:23 158:7 161:13 187:14,19 188:9 190:9 previously 12:6 61:16 69:1 79:4 87:5,17 99:9 123:20 149:25 primarily 133:18 137:23 primary 4:8 39:23 48:8 principles 133:4 prior 5:4 6:18 92:23 100:14 166:18 195:6 pristine 74:6 privacy 124:11 privilege 2:8 9:11 probable 67:18 probably 122:4 123:16 152:25 153:2 159:19 problem 43:5 60:14 68:13 69:17,18 104:6 151:11 problems 33:2 41:24 61:5 102:17 104:20 113:4,6 136:4 143:15 152:3 184:18 procedural 184:18 procedurally 101:6 procedures 4:17 6:3 8:17 182:19 proceed 23:8,24 24:2 25:3 35:2,20</p>	<p>51:14 52:2,6,23 57:14 58:8,11 59:11 67:13 68:5 71:18 72:8 77:5 79:21 80:9,12 81:3 91:2 91:20 115:2,16 139:15 140:12 146:23 147:15 161:22 162:9 166:4 166:16 179:15 180:5,8,21 187:23 190:18 191:4 193:7 proceedings 83:17 195:3,6,7,13 process 3:19,20,23 4:9 7:13 11:8 17:24 26:13 59:20 64:6 79:9 101:2,5 137:10 157:18 181:12,16 182:2,16,20 processed 6:19 53:22 processes 4:9 produce 144:16 produced 64:5,8,10 75:15 129:12 product 26:16 27:20 30:24 31:8 32:25 33:15 59:19,24 60:8 60:22 61:2,3 63:7 63:10 64:5,16,17,25 65:2,7,23 66:2 69:20 products 26:14,20 33:4 62:10 64:7,10 65:16 69:15 74:12 75:7 76:16 profession 101:22 professional 106:16 150:17 professionals 155:16 professions 159:13 program 12:6 30:20 31:3,19,21 46:6</p>	<p>programs 45:15,23 progress 73:1,5 progression 74:1 progressive 72:25 73:4,11 74:2 project 15:6,11 17:23 18:8,17 19:3 27:14 82:17 projects 19:11 185:17 proper 12:21,23,24 42:14,15,22 properly 44:6 152:1 property 171:14 proponent 24:7 46:14 47:5 100:6 101:17 103:18 117:13 123:4 proponent's 189:14 proponents 39:6 124:5 126:9 128:10 151:5 proposal 89:21 92:7 92:13 95:18 109:13 115:25 116:2,6 117:3 129:2,4,5,23 135:19 145:14 155:23 157:8 160:25 164:17,20 181:15,18 184:19 185:3 proposals 116:20 129:7 135:19 157:12 proposed 7:16 14:15 62:20 92:2,17 99:3 104:14 115:20 128:4 132:7 149:22 149:25 150:6 160:4 163:25 164:19 169:5,5 177:15 181:13 proposing 52:14 proprietary 59:17 59:25</p>	<p>propulsion 20:22 protect 105:14 171:16 protected 150:3,9 protecting 31:6 protection 1:9 18:2 18:16 20:25 27:21 28:21 43:23 82:18 94:21 102:12 113:16 117:23 128:10,16 129:25 132:7,25 157:23 159:18,23 169:25 171:24 173:8 175:7 184:23 protections 119:23 protocols 3:14 prove 116:2 proved 142:5 provide 27:25 29:22 38:24 40:9 54:7 62:5 69:10 74:7,13 81:7 82:16 86:17 96:4 121:1 129:8 130:1 143:2 150:23 164:25 165:11 169:24 171:4 183:17 189:8 192:15 provided 39:13 54:20 79:1 85:10 93:19 104:5 116:20 116:24 120:7 126:11 128:11 150:8 154:16 provides 44:3 99:14 providing 128:17 145:14 146:1 provision 97:17 141:2 153:16 182:11,22 185:14 provisions 84:15 95:20 105:20 144:2 181:23 185:4,11,18</p>
---	---	--	--

[provisos - reduce]

<p>provisos 78:13 prudent 129:24 public 16:3,8 24:23 27:10 34:13,17 36:8 39:11 45:13 46:5 53:22 71:23 72:2 76:25 77:8 83:3 86:5,8,9 91:25 92:15 101:21,24 102:20 116:24 118:22 129:2,10 162:2,4 163:19 165:19 166:9,12 177:20 182:14 190:23 192:23 publications 48:19 publish 27:10 published 4:5,13 5:4 5:12 7:5,6 23:17 25:25 57:24 109:18 109:22 pull 118:4 126:24 pump 18:9,11,16,18 puncture 31:25 punctures 30:11,12 31:6 purchase 162:24 purpose 7:24 73:15 142:7 171:11,12 purposes 142:15 pursue 6:2 17:8 22:5 50:15 193:12 pursued 7:17 push 78:17,18,21,22 put 31:9 33:15 47:4 47:16 61:1 70:7,8 109:13 112:7 134:2 148:19,21 181:9</p>	<p>138:11,13,17,20 160:20,23 161:1,6 167:6 189:16,18,20 189:21,23 190:3 questioning 94:1 questions 125:12 129:22 151:18 quick 130:21 150:11 quite 101:11 113:11 153:7 quorum 2:10 6:9,16 6:19 quote 148:11 171:15 173:4,10 176:4,9</p>	<p>101:25 102:20 112:1 123:21 124:9 133:10,22 135:20 145:13,23 153:8 155:20 159:17 160:2,9 reason 45:13 46:4,4 105:22 153:1 172:8 182:10 reasonable 82:25 83:24 87:9 105:11 135:10 169:25 175:19 reasoning 118:2 reasons 25:22 92:13 94:2 97:15 126:11 137:23,23 182:18 185:20 186:2 188:8 191:24 rebuttal 101:14 recall 182:4 received 5:8 45:24 recess 78:5 recheck 43:9 recipient 20:2 recognition 19:22 167:13 176:11,12 176:20 recognize 33:6 44:7 63:16 84:17,19 89:1 119:4 141:20 164:9 170:7 172:22 173:21 178:11 183:7 188:18 192:2 recognized 18:5 26:12,25 44:10 47:20 86:12 116:22 recognizes 19:7,8 176:6 recognizing 176:16 recommend 15:25 34:20 90:22 165:21 165:24 186:17,19 190:11,13 192:24 193:2</p>	<p>recommendation 6:14 123:19 recommendations 7:20,25 154:21 recommended 14:14,23 15:2,4,13 15:14,17,19 16:11 16:14,19 34:18,24 34:25 49:22,24 50:4 50:5 56:13,15,20,21 67:3,5,10,11 71:8 71:10,15,16 77:9,11 77:18,19 90:20 114:20,21 116:23 139:7,10 146:16,18 161:15,17 177:22 177:25 recommending 16:21 47:3 52:19 54:25 55:7 56:10 67:20,25 70:20 71:6 80:19,22 90:8,18 115:9,14 139:5 147:6,10 161:13 187:14,19 190:9 reconsidered 155:20 record 6:4 7:15 8:6 9:22 13:3 16:15 34:21 49:25 55:20 56:16 67:6 71:11 90:23 110:9 114:22 119:13 123:24 146:19 161:18 178:1 186:20 195:7 195:11 recorded 2:21 recording 2:12 3:15 186:4 records 9:1 100:9 rectangular 152:23 red 8:21 9:24 10:1 66:5 73:2,12 78:19 78:21 reduce 45:9 117:20 122:15</p>
<p>q</p>	<p>r</p>		
<p>qualified 116:9 quality 13:25 133:18 173:14 question 113:17,19 113:23 114:2,10</p>	<p>r 2:4 radiology 155:11 railings 144:5 raised 93:14 ramon 20:24 range 82:14 116:1 rate 133:17 ratings 130:24 ratio 157:11 rationale 81:15 ratios 131:3 138:4 reached 98:6 read 13:19 88:10 132:10 reader 164:2 168:8 168:13,18 172:23 172:24 176:15 readily 86:11 143:20 167:21 reads 24:13 ready 15:9,14 112:20 114:1 179:17 real 92:10,19 99:12 108:6,20 129:12 136:2 159:16 reality 63:1 really 30:17 49:4 55:1,10 97:18</p>		

[reduced - representing]

<p>reduced 177:14 reduces 129:5 reduction 120:11 128:15 129:15 132:7 refer 14:20 163:24 169:9 reference 40:1 109:19 162:13 163:23 166:24 170:20 174:2 175:20 191:9 193:21 referenced 56:2 74:14 85:12 170:25 177:12 references 36:13 91:9,16 114:18 163:5,12 167:3 169:15,17 referencing 47:25 88:9 163:6,7,9 referred 74:24 118:21 163:21 referring 168:8 170:24 172:23 refers 33:19 refines 39:8 reflect 10:14 11:1 reg 8:18 regard 74:13 112:24 145:16 171:18 regarding 25:19 28:11 33:4,20,23 37:24 40:1 44:1 47:13 93:2 104:7 111:19,20 112:2 116:22 128:18 136:13 145:5 158:21 159:2,5 188:4 regardless 121:18 131:3 144:8 regards 38:2 43:23 65:3</p>	<p>region 133:18 register 78:14,17,23 registration 3:9 4:1 12:10 79:1 regs 4:12,12 6:9,15 6:21 14:9 21:18 50:20 186:1 regulated 116:11 122:6 regulating 132:5 regulation 10:22 122:13 124:17 182:3 regulations 4:8,11 8:13 13:22 rehashing 189:15 reinstate 182:25 reinstating 181:1 reintroduce 53:3 reject 35:7,12 41:3 49:8,17 52:18 55:6 56:9 58:16,25 66:11 66:22 67:17,18,18 67:23 70:19 71:4 80:17,21 90:7,16 91:7,12,14 114:14 114:16 115:12 131:14 139:3,23,25 140:3,5 146:8,10 147:8 161:11 180:13,16 186:8,13 187:17 190:6 rejected 36:9 92:13 181:18 rejecting 25:23 45:13 46:5 115:7 129:9 147:4 174:14 180:17 187:12 relate 160:9 related 12:12 35:8 35:13 46:25 49:9,18 58:17 59:2 66:12,24 81:20 91:8,13 114:15 115:8,13 139:4,24,25 140:4,6</p>	<p>146:9,11 147:5,9 149:22 157:7 161:11 167:1 175:10 187:13,13 187:18,18 190:7,8 relates 155:21 relating 148:1 175:13 relationship 169:22 relative 84:12 169:12 195:16 releasing 59:3 relevance 176:22 relevant 111:1 129:21 reliability 18:18 119:24 relocated 61:15 68:25 136:11 relocation 128:20 rely 106:15 132:24 remain 131:3,10 138:2 143:21 175:23 remaining 11:16,19 191:14 remains 131:6 remarks 9:13,18,20 10:4 84:3 87:6 133:22 remember 43:11 157:8 remind 78:24 94:11 106:1 191:8 reminder 106:3,5 removal 28:13 33:24 167:3 remove 103:11 removed 17:11 22:8 28:16,20,20 50:18 167:1 187:6 193:14 renown 176:11 repairing 28:17 repeat 9:15</p>	<p>repeated 85:17 repetitious 12:19 replace 37:5,6 43:10 replaced 36:18 45:3 replacement 13:11 48:22 replaces 42:23 replacing 42:1 43:11 report 4:21 5:13 6:17,18 8:1 9:9 22:22,25 23:2,12,14 23:15,17,19 51:3,5 51:8,18,20,21 57:2 57:5,8,19,22,22,25 58:3,5 77:12 79:10 79:12,25 80:2,3 88:6,8,11,11,19,24 89:5 97:9 104:14 105:25 137:3 175:6 179:4,7,9,21,23,23 179:25 reported 1:22 27:11 136:14 reporter 195:2 reporting 100:25 reports 4:19,20 5:19 6:11,12 23:3,21 51:9,22 57:9 79:15 79:16 80:4 86:23 136:13 151:23 179:10 represent 35:6 101:20 105:13 representatives 10:16 22:4 97:6 representing 35:24 41:9 44:22 54:12 80:15 88:1 89:10 91:5,21 96:9 98:21 108:3 115:6 121:6 143:9 147:2,17 156:6 180:12 184:24 187:10,25</p>
--	---	--	---

[represents - revisions]

<p>represents 73:25 156:9 175:25</p> <p>request 128:24 141:20 160:2,12 164:8 170:6</p> <p>requested 195:14</p> <p>requests 99:21</p> <p>require 43:13 45:10 55:15 92:3,17 95:23 125:23 144:14,19 173:3</p> <p>required 12:23 27:12,16 29:5 45:5 62:16 92:25 97:19 97:21 107:17 119:23 120:19 130:20 142:8,9,16 142:22 150:16 169:15</p> <p>requirement 26:10 37:4 38:8 45:5,14 45:19 46:23 73:8,8 98:15 103:12 104:9 104:12 130:15 131:15 142:7 150:15,18 158:17 164:6 172:3 173:7 174:17</p> <p>requirements 24:15 26:2,5 27:22 36:14 42:22 44:15 46:2 60:13 61:15 62:25 68:14,25 72:17 102:23 103:1,21,21 103:22 112:16 130:13 144:6,8 150:19 153:25 165:10 168:12,13 168:19 171:17 172:20,25 173:3,5 176:8 177:12 185:13</p> <p>requires 12:25 72:17 138:19 143:18 150:11</p>	<p>requiring 126:16 144:4</p> <p>research 18:16 30:20 31:2,19,21 81:17 82:6,18 85:13 87:15 112:4,4,5,8 126:22 128:8,16,25 129:25 155:15 157:6 175:7</p> <p>resembled 85:16</p> <p>resembles 88:7</p> <p>reserves 11:21</p> <p>residence 144:23</p> <p>residential 150:12 178:16</p> <p>residents 96:22</p> <p>resist 26:3</p> <p>resistance 24:15 26:6,6 32:1 173:15</p> <p>resistant 26:2 29:3 31:24 74:16,20,24</p> <p>resolved 125:12 152:10 176:1</p> <p>resolving 18:11</p> <p>respect 8:17 94:20 142:16 157:3 167:22 175:23</p> <p>respond 96:18</p> <p>responder 105:13</p> <p>response 73:23 130:22 132:18 150:11</p> <p>responsibility 47:21 134:3 169:18</p> <p>responsible 13:7,10 44:16 84:11 122:20</p> <p>responsibly 137:9</p> <p>rest 45:4 84:16 106:1</p> <p>restate 16:7 34:15 49:16 52:14 56:8 66:20 71:3 77:6 90:14 114:12 139:2 146:7 161:10 165:18 177:19</p>	<p>186:12 190:5 192:21</p> <p>restrict 122:14</p> <p>restricted 39:12,15</p> <p>restrictions 131:9</p> <p>restrictive 48:4</p> <p>rests 84:17</p> <p>result 5:23 12:15 39:9,12 94:5 107:3</p> <p>resulted 120:10 142:6</p> <p>resulting 15:4</p> <p>results 7:4,6 16:18 23:22 31:2 34:23 38:14 50:3 51:24 56:19 58:6 67:9 71:14 77:17 80:6 85:10 90:25 114:25 123:12 128:20 129:24 139:13 146:21 161:20 166:2 178:3 180:3 186:22 190:16 193:5</p> <p>retain 186:14</p> <p>retained 150:17</p> <p>retaining 180:14</p> <p>retardant 58:1,2 59:18,22 60:1,3,12 60:23 61:16,22 63:1 63:11 64:20,21 65:24 68:25 69:5,21 74:18 75:1 76:18</p> <p>retention 93:7</p> <p>retirement 29:13</p> <p>retiring 194:4</p> <p>retroactive 104:9</p> <p>retroactively 95:21</p> <p>return 6:18 12:16 13:16 79:5</p> <p>reversed 83:6 181:17</p> <p>review 8:8 18:25 27:10 28:24 40:12 52:11 53:6 85:11</p>	<p>102:21 128:24 139:21 140:16 163:20 195:13</p> <p>reviewed 85:22 86:3 99:2 133:2</p> <p>reviewing 27:6,18 44:5 99:4 127:8</p> <p>revise 33:25 40:10 83:7</p> <p>revised 7:16 27:8,13 39:14 61:15,21 68:24 81:9 163:5,7 163:8,9</p> <p>revising 87:7</p> <p>revision 5:5,6,14,15 23:16 27:7 35:7,12 35:13 36:9 49:8,9 49:18,19 51:21 52:18 53:23,24 55:6 56:10 57:23 58:16 58:17 59:1,2 61:18 61:23 66:13,23,24 67:19,24 70:20 71:5 80:4,18,22 84:10 90:2,8,17 91:7,13 102:20 114:15 115:8,12 118:17,18 118:25 139:4,5,23 139:25 140:4,6 146:9,11 147:4,5 161:11,12 170:5 179:24 180:13,17 181:12,16,18,21 182:2,16,17,20 183:13,13 186:8,14 187:12,14,17,18 190:7,8</p> <p>revisions 23:17 30:21 35:8 51:22 57:25 66:12 69:3 80:4 91:9,14,14 114:16,16 115:9,13 139:24 140:1,5,7 143:25 146:10,12 147:9,10 179:25</p>
---	---	--	--

[revisions - second]

<p>181:25 revisit 153:1 revolving 129:22 rewarded 122:12 rewritten 44:1,9 rice 97:12 richard 77:24 130:6 rick 41:9 rickard 20:3,5 right 11:21 37:3 39:24 48:7,7 53:11 56:4,5 59:6 66:18 77:4 90:12 100:2 101:6 102:9 104:18 113:25 114:11 118:9,11 138:24 139:1 186:11 ripping 26:9 rise 10:17 92:18 94:4 95:20 96:1 97:19 98:1,8,14 99:18 101:16 107:16 109:5,10,25 110:13 112:25 156:7 166:8 rises 92:3 risk 115:24 116:18 124:1 125:8 133:16 risks 129:6,14 rj 51:7 road 106:8 robert 21:1 24:5 32:8 role 18:6 83:16 100:17 rolls 30:6 roof 36:17 39:16 116:3 roofing 45:3 room 2:25 9:11,24 13:18 79:3 105:5,10 105:24 136:6,17,25 138:1 rooms 126:16,16 130:25 131:1 135:3</p>	<p>136:21 150:13 155:1,2 roundabout 117:11 routes 140:20 rule 50:17,20 rules 3:14,22 4:25 5:11 7:22 12:8 13:5 13:19,23 17:9,9 21:18,18 22:6,6 50:16,20 126:15 183:25 187:4 193:13 run 73:9 118:1 152:2 runs 73:7 russia 159:16</p> <hr/> <p style="text-align: center;">s</p> <hr/> <p>s 2:4 131:20 safe 41:2 131:13 151:3 185:18 safeguards 132:24 safety 2:23 20:8,8 20:13 38:2,18 39:23 43:22 79:11 80:1,5 93:18 98:22 99:10 99:11 101:16,25 102:1,5 106:11 109:5,10,17 110:13 116:2,4,18 122:7,11 123:4,24 125:17 126:25 128:11,15 129:6,8 131:22 132:9 143:13,18 144:19,22 154:2 167:12,13,19 168:4 168:12,16,20 169:24 170:3,19 172:6,21,25 173:6 173:15 174:4 175:11,11,14,16,20 175:21 176:22 180:1 sajid 131:20 158:20</p>	<p>sake 172:18 sally 2:18 salons 86:10 sample 15:11 san 20:24 179:8 sarah 97:12 satisfied 185:11 save 184:16 saved 160:10 saves 160:10 saw 126:23 saying 45:2 88:17 89:5 93:19 105:22 174:15 says 59:21 60:11,22 63:13,13 65:5 66:1 66:5 75:14 88:4,11 88:12,19 89:5 95:22 97:19 121:17 141:1 158:13,13 160:9 163:1 174:17 182:10 scale 162:18,23 163:2 scenarios 18:23 128:21 scene 16:1,21 schedule 93:9 scibetta 166:6,7 171:8 175:3 science 153:3 scientific 115:24 128:8 scope 44:12 85:8 128:24 168:16 170:18 174:19,20 scoping 36:22 44:24 45:1,4 scoring 152:3 screen 11:18 14:20 15:2,3,5,6,12,17,18 15:21,25 16:11,14 16:20 23:7 24:14 34:19,20,24,25 49:22,24 50:4,5</p>	<p>51:13 56:13,15,20 56:22 57:13 64:4 67:3,5,10,12 71:8 71:10,15,17 77:10 77:12,18,19 79:20 90:20,22 94:14 114:20,22 139:7,10 146:16,18 161:15 161:17 165:21,24 177:22,25,25 179:14 181:6,11,23 186:17,19 190:11 190:13 192:24 193:2 screens 14:17 seal 48:23 search 162:24 seated 9:2 seats 95:25 second 4:21 10:15 11:24 14:15 22:1 23:3,15 24:25 25:1 25:2 35:7,12,16,17 35:19 36:9 49:8,17 51:9,20 52:18,20,21 53:23 55:6 56:9 57:9,22 58:16 59:1 59:8,9 61:20,23 66:12,23 67:19,24 68:2,3,4 69:3 70:19 71:5 72:4,5,6 78:24 79:16 80:3,18,21,25 81:1,2 83:4,5 85:17 90:7,17 91:7,9,12 91:14,17,18,19 92:14 101:18 102:19 103:7 109:13 113:20,21 113:23 114:15,16 115:8,12,15,15 118:25 123:10 126:1 136:6 138:14 138:15,16 139:4,23 139:25 140:3,5,9,10 140:11 146:9,11</p>
--	---	---	---

[second - situation]

<p>147:4,9,12,13,14 160:21,23 161:11 162:6,7,8 166:13,14 166:15 179:10,23 180:13,16,18,19,20 181:16,21 182:1,16 182:20 183:13 185:23,24 186:8,14 187:12,17,20,21,22 189:18,18 190:7 191:1,2,3 secondary 167:17 168:1,6 seconders 12:25 secondly 37:4 102:22 169:14 177:9 seconds 16:16 34:22 50:1 56:17 67:7 71:12 77:15 78:3 90:24 110:10 114:8 114:24 138:23 139:12 146:20 161:5,19 165:25 178:2 186:21 189:25 190:15 193:4 secretary 2:13,16,20 17:15 section 6:8,15 7:5,7 8:24 10:17,23,25 11:1,2,3,3,5,6 24:18 24:19 35:9,14 36:6 36:12,13,22 39:20 40:1 41:4 45:2,8 47:22,25 48:1,10 49:3,10,20 52:11 53:6 54:12,14,15,16 58:24 59:3 60:19,21 61:17,17,21,22 62:17 65:24 66:2 69:2,2,4,22 75:14 76:9 91:15 98:13,23 98:25 99:21 106:11 110:17 114:18</p>	<p>137:19 139:21 140:15 143:9 150:1 150:11 155:10 sectioned 149:23 sections 6:20 10:15 10:19,22,23 36:14 37:1 58:18 66:13,25 140:8 146:13 169:19 security 95:4 99:17 106:23 110:2 111:21,22 see 2:17 3:9 9:23 14:25 15:22 33:17 38:13 39:8 41:25 42:5,19,21 96:17,19 102:17 110:24 114:6 118:4 126:5 126:20,25 145:13 145:25 149:12 181:5,11,22 seeing 14:23 15:24 16:6 34:13 49:15 50:8 56:7,24 70:22 77:5 137:9 146:4 165:14 177:3 192:17 seeking 126:12 128:8 seeks 58:23 seemingly 117:25 seen 38:4 41:24 46:25 79:4 127:7 134:20 157:6 self 167:18 send 70:14 125:10 sending 64:24 65:1 68:15 124:25 sense 47:3 69:19 sentence 176:15 sentences 133:23 separated 142:11 sequence 23:8 51:14 57:15 79:21 179:16</p>	<p>series 117:25 serious 33:2 151:11 seriously 133:2 160:3,6,13 serve 95:1 97:22 101:16,19 105:5 122:15 176:20 193:23 served 20:11,12 serves 20:6 109:6 service 10:21 17:17 19:18,19,21,23 20:3 20:17,19 86:21 92:8 93:21 103:16 111:11 services 20:25 80:16 81:4 86:9 91:22 100:5 109:1 135:8 178:11 servng 2:13 94:23 178:14 session 1:12 2:21 4:4,7,17 5:16 6:10 8:23 10:18 12:2 13:18 14:10 23:6 51:12 57:12 79:5,19 146:13 179:13 set 3:22 100:12 195:4 seven 103:8 severed 193:22 sfpe 116:3 shape 65:8 shapiro 46:12 180:11,22 shawn 96:8 sherman 108:3 shifts 133:5 shingles 36:17 39:16 shops 86:10 short 157:1 shorthand 195:8 show 15:2,3,5 32:20 showing 14:21 15:18,21 105:4</p>	<p>144:20 shown 24:24 43:24 59:7 67:21 68:1 71:24 72:3 80:24 88:5 94:14 shows 14:14 105:8 side 61:4 sidenote 108:13 sides 60:25 63:13,19 65:5,6,8,8,9,10,10 66:5 112:11 siding 37:6 45:11 siemens 98:21 sign 6:1 signed 21:15 significant 17:22 72:25 73:3,11 128:14 129:23 167:14 significantly 132:8 signs 9:24,25 10:1 silent 175:23 similar 32:1 74:17 149:24 185:13 189:2 similarity 82:8 simple 114:6 162:12 173:25 simply 68:24 105:10 121:11 126:13 127:4 134:1 145:1 simulations 32:19 sinai 136:7 single 17:23 98:3 113:1 120:9 131:1 sir 84:3 95:13,16 112:20 132:1 134:9 137:12 146:5 159:1 165:16 site 3:25 4:5,13,24 5:18 12:3,9 23:4 51:10 57:10 79:17 179:11 situation 99:17 101:24 105:8,12</p>
--	---	--	---

[situation - specific]

<p>172:12 situational 99:8 100:16,18,21 101:4 107:3 situations 108:21 127:2 six 60:25 65:5 135:24 136:14 size 18:23 94:11 110:18 116:16,23 117:21 118:10,19 125:9,21 126:7 127:9 128:6,12 134:6,21 138:1,3 147:23 151:17 152:9,10,16,23 153:23 154:11,17 154:18 156:2,10 188:4 sizes 129:11 155:9 156:13 170:22 skip 134:15 143:6 slam 100:8 sleeping 130:24,25 150:13 154:23,25 slow 3:3 small 110:17 131:4 162:18,23 163:2 smoke 115:22 116:23 117:1,13 118:19 119:18 120:15,18,19,21 121:10 122:23 123:17 125:9,19,21 125:23 126:3,4,7,12 126:25 127:9,11 128:12 130:12,13 130:16,20 131:4,5,9 131:12 132:21,23 133:1,3 136:2,4,8,9 136:9,18,23 137:2,9 138:3 142:10 147:23 150:7,12,15 150:16 151:18,20 151:25 152:11,13</p>	<p>153:22 154:11,17 154:18 155:9,13 156:2,10,12,13,19 156:20 157:15 188:4 smokes 135:21 smoking 120:3 society 102:11 131:24 software 113:9 soil 155:2 sole 7:24 solution 153:2 somebody 65:23 104:13 139:17 soon 193:15 sophisticated 113:11 sorry 53:2,4 77:15 87:1 96:13 137:12 178:8 193:16 sort 113:5 sound 11:17 99:6 sources 85:9 space 120:7 124:10 124:11,11 138:5 148:22,22 spaces 86:8,11,13 142:10 144:15 145:18 154:24 155:1,3,3,4 spain 82:23 86:25 spd 155:11 speak 10:10 62:12 85:1 102:12 122:2 130:9 137:22 150:24 153:14 165:2 speaker 11:14,22 23:11 24:5,12 25:1 25:5 27:6 28:4 29:9 29:18,21 32:5,8 33:12 35:5,17,23 37:23 39:3 41:8,22 42:9 43:19 44:21</p>	<p>46:12 47:9 48:16 50:11 52:9,15,21 53:1,4 54:11 55:9 55:21,25 58:14 59:9 59:14 61:12 62:9,12 62:14,18 63:3 64:1 65:15,19,22 67:16 68:3,8 69:14 70:4 71:21 72:5,10 74:11 75:6,9,11,11,19 76:4,15 80:15 81:1 81:4 84:4,25 86:21 87:3,25 89:10,14 91:5,18,21 95:9,15 95:17 96:8,13 97:12 98:20 100:4 102:11 103:16 104:25 106:10 107:9 108:3 108:25 111:11,16 112:21 113:15,21 115:5,17 118:16 119:7,14,16 121:5 121:25 123:2,8,10 124:14 125:15 127:17 128:1,3 130:6 131:19 132:3 134:11,15 135:16 137:14,17 138:10 138:15 139:19 140:10,14 141:24 143:6 145:10 147:1 147:13,16 149:18 151:2 153:13 156:6 158:5,20,24 159:2 159:10 160:18,21 161:25 162:7,10 163:17 164:13 165:5,9,16 166:7,14 166:17 170:11 171:8 173:19 174:8 174:12 175:3 179:18,20 180:11 180:19,22 183:10 183:21 184:4,12,23 187:9,21,24 188:22</p>	<p>189:11 190:21 191:2,5 192:6 speaker's 123:23 speakers 159:3 160:7 speaking 24:6 28:1 29:18 32:9 35:25 38:25 41:10,23 42:10 44:23 48:19 52:10 53:5 54:8,12 55:20,21 58:15 62:6 68:9 69:11,15 70:5 72:11 74:8,12 76:5 76:16 81:5 86:18 88:1 89:12,13,14 91:22 95:10,14,15 95:17 96:5 97:13,16 98:22,23 100:5 101:12 102:6 103:10 105:1 106:12 107:10 108:4 109:1 111:14 111:16 112:22 119:12,14 121:2 123:6,8 125:18 127:19,25 129:3 134:16 135:17 137:18,19 139:20 140:14 142:2 143:3 143:7,10 145:11,11 149:21 151:4 158:6 158:22,24 159:11 164:16 165:1,7,9 166:8 170:12 171:5 171:9 173:20 174:9 174:10,12 175:3 183:11,18,22 184:7 184:13,25 189:9 192:6,16 speaks 185:3 special 11:7 17:16 17:21,25 19:14,16 154:8 167:9 174:24 specific 74:22 108:9 125:2 157:2 176:10</p>
---	---	--	--

[specifically - subject]

<p>specifically 66:1 74:23 94:23 101:12 102:23 103:3 108:9 109:2 specified 74:19 82:3 159:18 172:9 spend 122:9 spent 109:10 111:8 148:18 spoke 129:10 spoken 159:5 spread 73:5 74:2 136:9,18,23 sprinkler 18:23 117:16,18,22 119:22 150:3,10 154:3 171:24 185:4 185:19 sprinklers 130:21 150:12 172:3 square 81:11,11,13 81:18,25 82:3,10,14 82:15,20 83:2,8,21 83:25 85:5,16,19 87:8,10,13,16,16 88:7,13,14 115:22 115:23 117:2,2,4,7 117:12 119:19 120:15,20,22 121:12,14,15,17 122:18,23 123:19 130:12,17,19 131:2 131:11,11 133:4 135:2,3,4 148:13 150:7,8 152:18,22 154:12,13 155:6,7 157:21,22 158:13 sr 61:18,23 stable 171:24 staff 2:13 13:17 29:13 30:15 31:16 78:9 123:11 133:5 156:7 157:11,16 167:23</p>	<p>staffing 124:18 138:4 staffs 136:13 stage 18:3 20:4 101:18 102:20 109:14 stainless 25:6 stair 92:20 102:15 107:14 stairs 92:5,11,25 97:22,22 98:8,10,13 101:13 110:20 112:8 stairwell 96:24 97:3 108:11 stairwells 96:16 stall 105:10 stance 102:7 stand 10:3 standard 4:23 8:4,5 12:4,12,16 14:24 17:24 18:6 19:10 21:13,17,19,20,24 21:25 22:1,9 25:24 25:25 26:5 27:1,8,9 27:11 28:25 31:14 31:15,20 32:11,12 46:24 47:17 50:12 50:22 51:1,2 52:11 56:2 58:1 60:7 72:14,17 93:22 106:22 111:24 139:21 140:15 173:5,7 175:21 176:23 177:12 188:15 standards 2:9,15,16 2:20 3:19,24 4:9,12 4:14 5:5,7,9,14,15 6:12,24 7:17,21,21 7:23,25 8:2,9,14 11:7 13:23 14:2 17:13,14,15 19:3,24 20:15 21:4,21 22:11 22:14,20 26:24</p>	<p>30:13,14 47:17,24 50:23 53:6 64:15 73:16 77:25 79:9 109:7 119:25 132:11 155:24 159:25 173:24 175:8 184:17 standing 28:6 47:13 157:24 181:23 182:22 standpoint 148:16 stands 102:18 127:9 start 11:13 39:25 108:8,11 started 30:15 153:17 starts 113:5 state 10:3,18 11:2 24:11 29:16 55:19 59:5 83:11 87:6 92:23 94:22 115:5,6 115:17,19 125:15 125:18 126:14 147:1,3,16,18 160:18 187:9,11 188:1 189:11,13 195:2 stated 12:6 87:5,17 103:19 104:8 112:2 142:21 184:18 185:21 186:1 statement 31:18 45:16 73:23 103:20 111:19 116:21 129:9 132:9 135:25 171:11,12 172:12 176:2 182:10 statements 6:3,4 117:5 states 8:18 25:8,14 25:16 30:1 43:12,14 44:13 73:24 92:7 93:3 124:17 157:14 172:8 185:8</p>	<p>stations 155:2 statistical 151:22 status 11:7 steel 25:7 30:2 step 43:23 44:3,3,5,5 178:10 stepping 193:24 steve 184:12 storage 93:6 122:7 155:3 166:19,20,21 166:23,25 167:2 169:7 171:20 stored 93:8 stories 92:6 93:1 story 98:3,11,12,13 110:21 113:1 street 136:12 137:7 strength 173:14 stricken 64:4 stringent 172:9,15 173:3 striving 79:8 strobe 3:4 strongly 132:6 struck 137:6 structural 63:14 structure 132:15 135:24 167:9 174:24 structures 57:3,20 194:2 struggling 18:14 studied 18:18 studies 81:17 82:6,8 82:9,12,21,25 83:10 83:23 85:7,10,11 87:5,18 study 82:19 83:20 97:4 112:4,5 128:21 129:25 studying 18:23 128:17 subdivided 155:13 subject 10:21 37:24 38:14 39:22 42:10</p>
--	---	--	--

[subject - technical]

<p>43:25 47:15,23 86:6 86:11 92:22,24 93:12,14 177:10 submitted 23:19 32:10,13 39:7 51:23 58:3 80:5 83:4 89:22 92:1,15 116:5 155:23 180:2 submitter 163:21 submitters 185:3 subscribed 195:19 subsequent 7:2 82:9 subset 70:10 subsidiary 136:10 substantial 19:22 156:24 substantiated 87:18 substantiating 88:25 substantiation 36:10 126:8,19,21 154:10 success 16:25 123:13 successful 5:24 12:15,17 succinct 184:10 sucks 110:11 suffered 137:6 sufficient 27:19 44:4 123:25 128:7 suggest 55:14 suggesting 93:22 suggestion 124:19 suggestions 17:2 suited 152:14 summarize 133:23 superceded 89:24 superior 32:1,21 173:14 supervised 85:13 150:9 supervision 152:20 152:24</p>	<p>supplier 41:14,16 41:17 suppliers 41:12 supplies 38:11 supply 40:19 support 9:25 10:5 13:3,3 28:1 32:9 36:1 37:13 38:25 43:16 44:18,23 46:18 47:1,1,2,5 54:8,15 59:15 61:7 62:6 63:20 64:2 65:10 66:6 69:11,25 70:16 72:11 73:17 74:8 75:25 76:20 80:19 81:5 85:23 86:18 87:3,20 91:23 96:5,11,15 97:8,13 99:22 103:11,17 112:17 115:25 116:17,19 117:5,8 118:11 121:2,5,22 123:18 127:14 135:12 141:12 143:3 149:6 150:24 151:4 155:3 156:7 156:16,17 157:25 163:11 165:1 171:5 180:23 182:24 185:1,20 186:3 188:10 191:6,16 194:11 supported 100:13 117:18 126:19 supporter 174:13 supporters 174:15 supporting 63:22 96:14 116:21 128:14 151:7 supportive 145:4,5 supports 97:9 174:14 supposed 143:21 145:21</p>	<p>suppress 99:16 suppression 116:14 sure 40:8,12,25 56:4 59:4 62:21 95:18 124:21 135:18 148:2,5 177:13 191:9 surge 19:2 surgery 137:5 survey 79:1,5 surveying 97:22 surveys 79:2 survive 172:17 susan 137:17 sworn 195:6 system 10:13 32:22 36:19,19 40:5,7,8 40:11,13 44:6 94:25 103:22,24 106:11 108:8 110:16 111:21,23 119:24 133:14 150:10 153:19,20 174:3 186:4 system's 111:21 systems 18:8,14 20:11 33:21 95:4 98:22 106:23 110:2 148:19 153:24 154:3,3 155:3 173:13 szachnowicz 178:21</p>	<p>123:10 124:2 127:3 151:12 163:18 185:22 taken 4:5,16 8:7 9:5 78:5 153:22 188:2 195:3 takes 177:13 talk 13:20 22:20 75:18,20 95:18 118:8,10 126:7 128:13 talked 109:12 111:8 talking 29:23 30:11 31:10 73:6 112:10 122:10 talks 104:3 tall 100:22 101:8 102:15,24 tanks 136:23 task 18:8,19 19:2 30:14,15,16 113:8 153:18 154:8,8 tasked 154:17 tear 26:8 tech 1:12 4:7 5:16 8:23 12:1 14:10 23:6 51:12 57:12 79:19 179:13 technical 1:12 2:11 3:16 4:6,10,19,19 5:1,16 6:5 7:9,10,13 7:15 8:8,18 10:12 10:24 12:1 13:15,21 13:25 14:9 16:24 18:12,20,24 19:20 20:6,9,13,20 21:9 22:23 23:6,12,16,20 36:4,10 48:6 51:12 57:3,12,19,24 58:4 61:14,20 78:25 79:19 81:9 83:6,9 83:14,18 84:11,20 85:3,14 86:2 92:1 92:12,16 93:11,13 95:6,8 97:15 99:2</p>
		<p>t</p>	
		<p>t 29:11 120:14 tab 23:22 51:25 58:6 80:7 180:3 table 13:17 79:6 tables 84:15 tactic 105:10 tactics 124:23 tailors 176:8 take 2:24 10:23 62:20 70:14 78:1 96:18 113:9 122:6</p>	

[technical - think]

<p>99:23 106:20 110:11,14 117:6 118:23 119:4,10,11 119:16 122:1 123:15 124:12 126:10,18,20 128:7 128:14,18 129:12 129:14 130:8 135:12 141:20 142:1 148:6 149:14 149:21 164:9,14 175:8 178:12,15,17 178:19,20,22 179:13 181:24 182:9,21 188:24 192:10 193:25 194:1,9 technically 37:7 123:21 164:19 192:12 technologies 41:23 55:10 158:6 technology 32:17 129:19,21 ted 29:10 42:9 tell 64:15 69:22 138:24 telling 68:15 172:23 temperature 26:7 temporarily 112:7 ten 25:13 30:8 78:2 78:2,3,3 110:10 137:5 tend 169:9 172:16 tendency 122:14 tends 108:12 122:14 term 39:22 110:11 145:16,18,25 178:13 terminated 6:11 terminology 163:23 terms 32:13 97:24 152:3,8 test 16:2 18:11 26:8 27:12,13 31:18 61:2</p>	<p>61:3,4 63:12,15,18 65:10 93:16 162:17 162:18,18,19,21,21 162:22,23 163:1,2 163:13,23,24,25 191:10,10 tested 26:23 32:3 60:24 73:3 testifying 195:6 testimony 43:21 46:16 147:20,25 169:23 174:13 177:6 188:9 189:14 189:15 195:11 testing 18:7,9,13 19:9 26:1,13,13 32:16,17,19,19 74:15,19 93:9 tests 26:5,6 texas 20:6 51:7 text 14:15,16,18,20 14:23,25 15:3,4,13 15:14,17,19,24 16:11,14,20,21 24:24 34:19,20,24 34:25 45:8 49:22,24 50:4,5 52:19 55:7 56:11,13,15,20,21 59:6 67:3,5,10,11 67:20,25 68:1 70:21 71:6,8,10,15,16,24 72:3 77:10,11,18,19 80:19,23,24 90:9,18 90:20,22 92:2 93:1 102:21 103:1 106:19 114:20,22 115:10,14 139:6,7 139:10 146:16,18 147:6,11 161:13,15 161:17 165:21,24 177:22 180:14,17 181:1,5,6,7,10,22 182:10,25 186:15 186:17,19,19 187:15,19 190:9,11</p>	<p>190:13 192:24 193:2 textile 162:13 th 96:21 thank 16:18,25 17:19 20:19 21:5,11 21:12,23 22:18 24:1 24:10 27:3,23 29:6 29:7,9,20 32:5,6 33:10 34:6,7,23 35:11,18,23 37:19 37:20 38:21 41:6,19 41:20 42:7 43:15,17 44:19,21 46:9,10,14 47:7 48:13,14 49:6 49:14 50:2,10,11,25 52:4,13,22 53:18 54:4 55:3,4,22 56:19 57:1 58:10,20 59:10 61:8,9,12 62:1,2,13 63:23,24 65:12,13,21 66:8,9 66:16,18 67:22 68:18,19 69:6,7 70:1,2,17,24 71:1 71:13,25 72:7 73:17 73:18,21 74:4,5 75:3,4,10 76:1,2,12 76:13,22 77:4,21,22 79:7,24 80:11 84:6 84:7,9,25 86:14,15 87:21 89:6,7,15 90:4,5,12 91:11 94:9,10,17 95:16 96:2 97:10 98:17,18 99:24,25 102:8,9 103:13,14 104:22 104:23 107:6,7,25 108:1,22,23 112:18 112:19 113:13,15 118:13,16 119:7,15 120:23,24 121:23 122:25 123:2,9,14 125:13 127:15 128:2 130:3,4</p>	<p>131:16,17 134:11 134:13 135:14 137:14,15 138:7,8 139:14 140:2 141:13,14,17,24 142:23,24 145:7,8 146:2 147:7 149:7,8 149:11,18 150:20 150:21 151:2,6 153:10,11 156:3,4 158:2,3,18 159:1 160:12,15,16 163:13,14,17 164:13,22,23 165:12,17 166:10 166:17 168:22,24 171:2 173:17 174:5 174:6 175:1 176:25 177:17 178:24,25 180:7,15 183:2,3,15 184:2,21 186:5,6,10 188:11,12,22 189:5 189:6 191:18,19 192:13 194:3,10 thankfully 152:4 thea 193:8 thing 72:13,15,21 78:3 108:16 109:11 111:3 113:7 144:9 158:9 things 10:6 15:10 70:12 72:23 75:7 78:11 100:24 113:10 122:10 159:4 160:1 170:15 170:16 174:19 think 43:4,5 46:17 49:2 53:13,16 54:23 55:10,25 56:3 70:8 88:20 89:20 98:12 102:14 104:19 105:3,6 107:15 111:6 113:3 114:9 122:20 124:13 125:19 127:6,12</p>
---	---	---	--

[think - understood]

<p>133:20 135:10 141:3 145:23 148:25 149:2 152:12 174:2 thinks 105:9 third 63:6 thirds 113:25 114:7 138:19,25 161:7 thomas 20:23 22:25 thought 111:7 126:11 thoughts 66:15 70:23 77:1 thousands 37:8 185:17 three 11:13 26:16,17 29:14 59:16 61:5 122:9 133:23 169:3 thursday 1:15 2:1 tie 9:8 tighten 42:16 tiles 36:17 tim 52:9 53:4 139:19 140:14 time 10:16,16 11:14 11:17,20,24 13:12 14:7 18:24 19:22 25:14 29:1 30:7 32:4,10,15 43:8 69:20 73:10 78:14 78:15,18 82:2 84:19 90:23 92:10,15,19 93:5,21 99:12 101:3 103:7 105:19,23 110:3 111:8 120:10 122:19 123:16 126:6 129:13 132:18 134:10 137:13 153:6,9 155:20 157:1,16,20 157:21 184:16 194:5,15 195:4 timer 11:18 times 9:21 60:6 78:22 109:20</p>	<p>127:10 129:15 143:20 157:7 today 3:23 4:16 5:20 7:11,24 10:7 11:9 13:1,20,24 15:23 18:6 19:25 20:18,21 30:24 31:7,15 79:5 83:16 99:18 113:12 129:17 today's 4:4 36:20 99:9 tony 156:6 tool 14:10 tools 116:1 129:17 top 8:22,22,24 topic 100:20 topples 118:5 torbin 24:5,21 32:8 torrington 57:6 total 72:16 tough 133:7 tower 98:4 112:25 traced 30:10 trade 97:5 tradeoffs 117:19 traditional 25:10 145:24 154:22 155:6 traditionally 29:25 traffic 122:5 132:17 tragic 159:14,17 training 122:7 133:5 transcribed 9:22 195:9 transcript 195:10 195:13 trapped 96:23 travel 116:25 117:3 117:6,8,9,14 120:17 122:8 125:3 126:1,2 126:3 127:5,11 130:16 131:5,9 138:1 142:14 150:14 152:17 153:25 155:7 157:3</p>	<p>157:4,19 171:22 172:15 177:14,16 treat 63:17 treated 58:1 59:18 59:23 60:1,11,15,23 61:16 62:9 63:1,11 64:9,17,21,25 65:24 69:1,5,14,21 74:11 74:18 75:1,6 76:15 76:18 137:9 174:25 treating 60:3 treatment 60:24 64:10 130:25 134:22 135:3 trend 120:2,6,8,10 trigger 36:22 37:5 triggered 37:8,12 39:20 triggering 48:21,24 true 126:6 127:12 130:14 195:10 try 15:10 38:15 112:25 153:18 154:10 trying 62:17,23,24 63:8 65:25 70:7 75:14 101:7 135:5 145:17 154:18 tube 73:7,7 tubing 25:7 26:20 30:1 32:1 tuesday 100:19 turn 21:8 168:5 two 4:20 5:19 12:25 15:3,18 16:1,14,15 16:21 34:21,21 35:1 44:9 49:24 50:6 54:18 56:15,15,22 67:5,5,12 71:10,10 71:17 73:15 77:12 77:12,20 82:21 86:23 90:22,22 98:12,13 102:17 111:17 112:1 113:14,25 114:5,7</p>	<p>114:22,22 125:24 136:4 138:19,22,25 139:10,10 146:18 146:18 158:10,11 158:12 161:2,7,17 161:17 162:12,22 163:25 164:3 165:24 177:5,25,25 182:18 185:19 186:19,20 189:24 190:13,13 193:2,23 type 3:15 29:2 45:21 106:16 117:21 130:22 133:7 167:11,21 176:10 176:12,19 types 86:5 106:17 143:14 154:21 typical 120:7 typically 7:7 28:15 31:4 155:10 164:4</p>
u			
<p>u.s. 25:13 132:13,15 133:10,17 134:4,7,8 159:5,5,19,25 uae 131:22,25 132:4 158:21 uaw 131:24 un 129:5 unable 20:17,21 unanimously 97:7 uncontested 14:2 undeniably 129:5 underlined 181:5,6 underlying 38:16 undersigned 195:1 understand 29:24 48:1 62:22 83:16 97:18 112:4 understanding 118:24 understands 54:17 understood 124:4</p>			

[undertaken - voted]

<p>undertaken 9:3 40:3 82:18</p> <p>undertaking 182:19</p> <p>underway 33:24</p> <p>unenforceable 43:5</p> <p>unfortunately 45:1 60:16 117:23 123:18 144:12</p> <p>unified 155:12</p> <p>unique 97:24 167:10 171:17 172:20,22 175:15,21 176:18</p> <p>unit 118:1 136:21</p> <p>united 25:8,16 30:1 157:14 185:8</p> <p>units 13:14</p> <p>university 82:22 86:24</p> <p>unknown 25:1,5 32:5 35:17 39:3 46:12 52:21 59:9 61:12 62:14 68:3 72:5 81:1 91:18 113:21 138:15 140:10 147:13 159:2 160:21 161:25 162:7 165:16 180:19 187:21 191:2</p> <p>unlimited 143:14</p> <p>unnecessary 72:24 192:11</p> <p>unoccupied 83:13</p> <p>unquote 148:11</p> <p>unresolved 28:10</p> <p>unspecified 144:13</p> <p>update 82:17</p> <p>updating 135:10</p> <p>upper 121:19 154:21</p> <p>upsets 112:1</p> <p>urban 72:20 74:21 74:23 76:11</p> <p>urge 63:20 66:6 69:24 75:1,24 87:20</p>	<p>112:17 121:22 127:13 135:12 138:6 141:12 153:5 157:25 163:10,10 176:24 191:16</p> <p>urgency 167:15</p> <p>usage 86:3 92:20</p> <p>use 3:6,14 15:6 24:8 25:6,14 40:19,20 43:8 61:1 81:10,14 81:16,19 82:11,14 82:21 83:8,12 84:1 85:24 86:1 87:8,10 87:12 88:4,25 90:3 97:2,3 98:7 100:21 120:10 129:17 141:5,6 145:1 148:24 149:3 156:14 171:19 173:13</p> <p>useful 14:10 142:15 174:4</p> <p>user 164:2</p> <p>users 142:7</p> <p>uses 31:8 86:5</p> <p>usually 117:24</p> <p>utility 155:2</p> <p>utilization 154:25</p> <p>utilize 130:15 155:17</p> <p>utilized 154:6 155:11</p>	<p>various 82:7 128:20 135:18</p> <p>vegas 1:14 2:1,22</p> <p>vent 40:13</p> <p>ventilation 38:3,7 38:10 42:14,22 49:1 49:1</p> <p>venting 36:15,19 38:3,6 39:21 40:11 40:12,15,23 42:15 44:6 46:3 48:8,11</p> <p>vents 136:24</p> <p>verbal 145:1</p> <p>verbiage 54:19 164:4</p> <p>verified 85:21</p> <p>verify 36:20 111:24</p> <p>veritext 2:21</p> <p>version 28:8 38:15</p> <p>versteeg 57:6,6,16 58:11 61:10 62:3,14 66:15 68:20 69:8 70:22 73:19 77:1,21 107:9,10 193:25</p> <p>veterans 119:9 141:25 149:19 188:23</p> <p>viable 152:17</p> <p>vice 2:17</p> <p>vickie 123:3 151:2</p> <p>video 3:14 92:5,22 92:24 93:4,5,7,17 93:19,20,24 94:3 95:23 99:12 100:7,9 100:17,22 102:14 104:4 105:7 106:7 107:16 108:10 109:19 110:1 112:3 112:6,9</p> <p>videos 111:23</p> <p>view 40:4</p> <p>viewed 85:7</p> <p>views 10:10,14 11:1 103:9</p>	<p>vinyl 37:6</p> <p>violates 185:23,25</p> <p>violation 182:19 183:25</p> <p>virginia 159:22</p> <p>vision 102:24</p> <p>visual 152:20</p> <p>voice 3:5 9:4</p> <p>vote 7:23 8:7,25 9:4 9:8 13:13 15:12 16:6,7,10,13,15 28:7 34:14,15,18,19 34:21,23 37:17 42:6 43:16 49:15,16,21 49:23,25 50:3 54:1 55:15 56:7,8,12,14 56:16 61:18,24 62:11 63:21 65:17 66:7,19 67:2,4 69:24 71:2,3,7,9,11 71:14 75:2,24 76:20 77:6,6,9,11,13,17 78:15,16,17,23 88:3 90:14,19,21,25 96:14 106:6 113:24 113:25 114:5,11,12 114:19,21,23 127:13 135:13 138:6,17,18,21,22 139:1,2,6,9,11 146:7,7,15,17 153:8 155:19 160:13,24 160:25,25 161:2,2,3 161:9,14,16,18 165:18,20,23,25 177:19,21,24 183:25 186:12,16 186:18 188:7 189:21,24,25 190:4 190:5,10,12,14 192:21,21,23 193:1 193:3</p> <p>voted 42:11 54:15 62:15 83:15 93:13 97:7 122:19,22</p>
	<p>v</p>		
	<p>validate 30:17</p> <p>validated 31:3</p> <p>validating 27:15</p> <p>value 83:1 85:19 86:1 88:16,23 93:25 99:14 176:22</p> <p>values 88:12 107:4</p> <p>van 153:13</p> <p>variable 86:7</p> <p>variety 25:9 86:3</p>		

[voted - years]

<p>137:21 votes 7:10 9:4 11:5 16:19 56:19 67:6,9 90:23 146:19 153:5 178:1 186:20 voting 4:16 7:12,19 8:17,18,20,22,23,25 9:1,3,5,6 11:10 13:2 13:6,7,9 14:22 15:1 16:2,16 23:21 58:5 78:9,10,18 114:8,24 161:5 166:1 189:19 190:15 voting's 138:23 189:25 vulnerability 160:8 vulnerable 116:13</p>	<p>way 44:3 53:10,11 54:2 55:12 60:20 72:21 73:4 97:17 100:13 101:1 109:7 118:11 124:7 141:8 170:18 174:19 175:11 we've 13:19 64:12 64:14 72:22 102:1 105:19 109:8,10 114:6 140:23 156:12 157:12 184:18 wear 26:8 weatherization 36:24 45:15,23,25 46:6,21 weatherizing 42:1 web 3:25 4:5,13,23 5:18 12:3,9 23:4 51:10 57:10 79:17 179:11 week 94:18 98:25 100:19 118:7 weigh 11:10 weighing 86:7 welfare 167:19 168:6 went 44:9 116:25 126:22,23 154:15 156:15 181:20 whatsoever 113:4 121:21 whereof 195:18 white 73:14 wholly 167:18 whoop 3:3 width 142:16 wiese 127:18 wild 164:3 wildland 72:20 74:21,23 76:11 william 79:13 williams 125:15 160:18 189:11</p>	<p>willse 20:24 194:1 wilmington 21:3 wind 84:2 window 37:12 42:23 42:25 43:1,11 46:21 windows 42:1 43:10 45:10 winners 20:17 wire 31:4 wish 16:10,13 17:7 22:5 34:18,19 49:21 49:23 50:15 56:12 56:14 67:2,4 71:7,9 77:9,10 90:19,21 114:19,21 139:6,9 146:15,17 161:3,14 161:16 165:2,20,23 177:21,24 186:16 186:18 190:10,12 192:23 193:1 wishing 11:23 witness 195:18 witnesses 195:5 wixed 2:19 woman 137:6 wonder 133:9 wood 58:1 59:19,19 59:23,24 60:1,3,23 60:24 61:1,16 62:10 63:1,11,15 64:4,21 64:22 65:15 66:4 69:1,15,21 74:12,18 75:1,6 76:16,18 woodbine 21:2 word 45:21 53:24 worded 53:11,12 141:8 wording 38:13 164:18,20 185:11 192:11 words 4:15 37:3 70:7,8 73:3 90:10 101:9 114:2 146:4 165:15</p>	<p>work 21:24 24:6 30:17 37:7 38:15 46:25 51:1 100:10 100:19 109:21 167:6,11,16 168:4 168:20 175:23 176:17 workable 152:18 153:2,9 worked 185:9 working 18:9 29:12 29:15 46:21 109:8 170:1 workrooms 82:4 world 97:5 99:9 108:20 159:24 worldwide 159:6,14 160:5 worth 83:20 182:8 worthless 162:19 worthy 20:1 wpi 82:22 83:20 86:23 write 48:2 written 41:11 49:4 97:17 103:19 104:19 142:8 wrong 36:24 37:3 46:20 55:18 66:2 126:5 182:11 www.nfpa.org 23:23 80:8 180:4</p>
w			
<p>wait 34:4 78:17 129:24 waiting 22:10 walls 151:25 want 9:7 29:22 33:22 44:10,14 45:20,23 46:14 95:19 96:19 101:3 107:23 124:2 130:17 141:11 148:4 152:16 158:9 162:13 163:4 170:16 193:8,11 194:10 wanted 32:24 74:13 76:7 157:2 wants 42:19 75:17 warehouse 155:11 warren 178:15 washington 125:15 125:18 160:18 189:11 waste 69:20 water 18:8,13 133:21</p>			
x			
			<p>x 195:13 xl 20:25</p>
y			
			<p>yeah 53:1 159:9,10 188:14 year 64:14 122:2 127:10 176:3 yearly 135:23 years 19:12 22:10 25:8,13 29:14 30:8 30:9 70:9 72:22</p>

[years - zones]

73:5,15 82:5 85:20
87:19 100:8,10,13
100:16 101:3
109:10 110:7
119:20,20 120:5
126:14 127:7
129:11,18,20
130:11 134:18,21
137:11 140:17,23
143:11 158:10,11
158:12 159:25
185:12,18
yellow 25:11 30:25
31:1 32:2,14,21
yellowing 48:18
yesterday 54:14
137:22 182:4,6
183:24
yielding 11:22
yo 156:4
york 20:23 136:7,22
159:22
youngblood 41:9

z

z223 36:4
zone 153:23 154:11
154:18 155:9 156:2
zones 154:17 155:13